APX

ATARI® PROGRAM EXCHANGE

Product Catalog Winter Edition — 1982-83   PRICE $2.00

User-Written Programs for ATARI Home Computers

Printed in the U.S.A.

Contents

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What is APX? Atari, Inc., created the ATARI Program Exchange (APX) to manufacture software written by users of ATARI Home Computers. Our goal is to increase the usefulness of ATARI Computers by offering high-quality, imaginative programs appealing to users of all ages and with differing needs and interests.

The APX catalog. Our quarterly catalog lists the products currently available through APX. You can obtain future issues of the catalog at your local ATARI Computer retailer. All the items in the catalog are available by mail or by toll-free phone order. In addition, many ATARI Computer retailers carry APX software. Before ordering, please read all the ordering information elsewhere in this catalog.

Program availability. Programs are available at the prices listed in this catalog starting December 13, 1982.

Program descriptions. The descriptions and review comments reflect the programs as of the date the catalog went to press. In some cases, authors have improved their programs so that the product shipped differs from that described. However, the computer memory requirement never increases (although it may decrease) and any changes will enhance the products.

Program revision numbers. An increase in the number to the left of the decimal point means one or more new features have been added to the program. An increase in the number to the right of the decimal point means one or more errors in the program have been corrected. An asterisk after the revision number indicates the program has been newly revised in this issue.

Symbols used in program descriptions. A "NEW" symbol appears next to the title of programs new to this issue. Prize-winning programs for the current and the previous quarterly contest display a ribbon. The "Premium — ATARI Staff" ribbon identifies exceptional programs written by ATARI staff members, who aren't eligible for the contests. The "PAL" symbol denotes a program that has been tested and is recommended for PAL systems, and the PAL symbol indicates the program is not recommended for PAL systems.

How to submit programs to APX. We'd like the opportunity to look at well-written programs you've created for ATARI Home Computers. You'll receive a quarterly royalty payment for sales of your programs through APX. For details, call our toll-free number, 800/538-1862 (or 800/672-1850 for calls within California) and request an APX Program Submission Packet.

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ATARI 400™ Home Computer
ATARI 800™ Home Computer
ATARI 410™ Program Recorder
ATARI 810™ Disk Drive
ATARI 820™ 40-Column Printer
ATARI 822™ Thermal Printer
ATARI 825™ 80-Column Printer
ATARI 830™ Acoustic Modem
ATARI 850™ Interface Module

Our last issue of 1982 is brimming with interesting, easy-to-use new programs — just in time for holiday gift giving and for your own enjoyment. For example, everyone should find something to his liking among the eight new games, which range from outer space battles *(Quarxon* and *Phobos),* to a contest that's great for groups *(Game Show),* to a humorous, friendly version of dice poker *(Yahtman),* to the chance to coach your very own football team to victory *(Gridiron Glory).*

We're especially pleased with the growing diversity and quality of our educational programs. Along with six more programs from the Minnesota Educational Computing Consortium, we have new programs everyone from preschoolers on up will enjoy. *Monkey Up a Tree* makes a great family educational game because game play is most exciting when everyone tries his best, children and adults alike. And we introduce our first program written in ATARI PILOT in this issue, *I'm Different!* In fact, we now carry many fine educational programs for young children, new programs like the ones we just mentioned, along with current favorites like *Counter, Spelling Genie,* and *Cubbyholes.* Another new program under Education, *Typo Attack,* is an arcade-style game that makes learning hard to distinguish from just plain fun. It's different and it really gives the advantage to skilled typists in the house.

If you're a hobbyist or a professional programmer, you'll want to check the System Software category for tools you'll wonder how you managed without. We add another language to the ATARI Computer with the introduction of *Deep Blue C Compiler.*

This issue contains 159 programs. Those of you already familiar with our programs may notice that we've removed some old ones in this issue. As we receive new programs similar to current ones but with added features or of superior quality, we're substituting the better ones, thus helping you select the best we have to offer.

Results of the autumn contest

This quarter's first place winners were dominated by teenage authors. Three out of four are eighteen or under! In these times when it can be hard for young people to find jobs, writing programs for APX may be a good way to turn a hobby into a source of income. It can be just as good a route for all ages, from teens to retirees.

In the *Consumer* category, which includes Entertainment and Personal Interest and Development, first place goes to eighteen-year-old Scott Ludwig of Hickam Air Force Base in Hawaii for *Quarxon,* a one- or two-player space game that combines arcade-style action with an intellectual challenge. It also has especially beautiful colors and graphics. Scott is a four-year veteran programmer, who, like other young authors, purchased his ATARI Computer with his own money. Second place goes to Chuck Gibke of Arlington, Texas, for *Air-Raid!,* an arcade-style game of flight. Third place goes to the author of an APX program that has since become an ATARI program. Greg Christensen, author of *Caverns of Mars™,* wins again for *Phobos,* which requires a different set of skills than *Caverns of Mars* did to master all the challenges.

In the *Education* category, sixteen-year-old David Buehler, a high school junior from St. Paul, Minnesota, wins first prize for *Typo Attack.* David has been programming for three years, one year in assembly language. His experience shows in this well-designed, offbeat educational arcade-style game for improving your touch-typing skills. He designed a very slick program with the most basic of ATARI Computer Systems: an ATARI 400 Computer with 16K of memory, an ATARI 410 Program Recorder, and the Assembler Editor Cartridge. Second place goes to Wes Horlacher of Provo, Utah, for *The Magic Melody Box,* an easy and enjoyable way to introduce all ages to music composition. Wes brought twelve years of research on music and computers to this program. Third place goes to a husband-wife team, Kathleen and Philip Bergh, of Puyallup, Washington, for *I'm Different!* our first APX program written in ATARI PILOT and a beautifully designed program for preschoolers. The Berghs commented that their two-year-old daughter was a significant contributor to their program, doing most of the user testing for them.

In the *Business & Professional Applications/ Personal Finance & Record Keeping* category, the over-21 crowd finally came through with a first prize. Richard Lindgren, an assistant professor of business of Graceland College in Iowa and a Certified Public Accountant, wins for *Real Estate Cash Flow Analysis,* an easy-to-use program designed to help both new and professional investors analyze the costs and benefits of income-producing property. Second place goes to repeat author Ingrid Langevin of McLean, Virginia, for *FOG Index,* a quick, painless way to analyze text readability. Anyone who has counted syllables and sentences and computed formulae will appreciate this time-saving program. Insufficient qualifying entries prevented us from awarding a third prize in this category.

Our *System Software* winners highlight young, repeat APX contributors. Seventeen-year-old Thomas Newton of Wrights Beach, North Carolina, wins first place for *BASIC/XA,* a handy set of development tools for ATARI BASIC programmers. Thomas, who is also the author of *Keypad Controller* and a doctoral candidate in computer science, says he especially appreciates the technical information Atari provides about its computers, which makes his programming tasks easier and more rewarding. Second place goes to two-time first place winner John Palevich of Bethesda, Maryland, for *Deep Blue C Compiler,* an exceptionally professional implementation of the SMALL C language for ATARI Computers. John, a senior at M.I.T., also contributed the source code for his implementation; it's available as the APX product, *Deep Blue Secrets.* We awarded two third place prizes this quarter to make up for our not being able to award a third prize earlier this year. One goes to James Bayless of Austin, Texas, for *Music Player,* a program that lets you incorporate into your programs song files you create with the ATARI Music Composer™ cartridge. The other third place goes to Al Harberg of Bloomfield, Connecticut, for *Diskmenu,* a time-saving program that loads BASIC and machine-language programs into your computer with a single keystroke.

We extend our congratulations and plaudits to all our winners for their outstanding programs!

APX programs available through ATARI Home Computer retailers

Orders from more and more ATARI Home Computer retailers continue to pour in, which means you can purchase many APX programs more quickly by visiting your local ATARI Home Computer retailer. The kinds of stores carrying our programs are rapidly expanding. Look for APX programs both at computer stores and at general retail stores like Sears. If you're an ATARI Computer retailer who hasn't yet ordered APX software, contact your ATARI representative.

We're improving our user instructions

| EASTERN FRONT 1941 | COUNTER | GALAHAD AND THE HOLY GRAIL | ADVANCED MUSICSYSTEM |
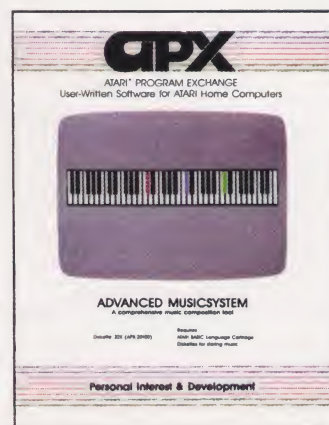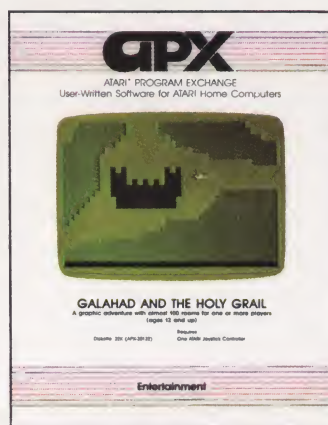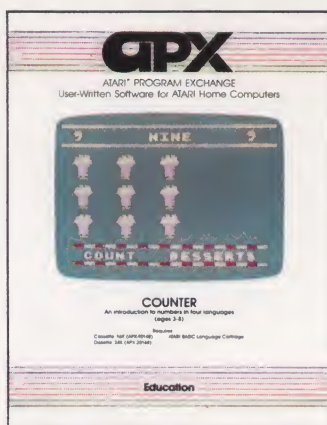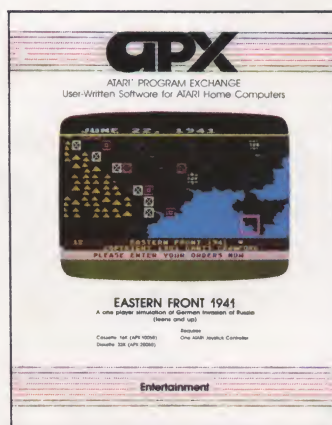
During this past quarter, we selected four of our most popular programs to experiment with improving the appearance of their accompanying user manuals. First we redesigned the covers to include a four-color, large photograph of the program's screen display. The back cover contains a complete program description, and because our authors are very important to us, we also feature a photograph and a short biography of the program author. We've changed the insides, too! The instructions have been typeset and the layout revised to improve readability and ease of locating information quickly. As part of our commitment to offering ATARI Home Computer owners high-quality programs and user instructions, we're now converting more program manuals.

Next contest deadline is January 1

All programs accepted by APX between October 2, 1982 and January 1, 1983, automatically become contestants in our spring judging. First, second, and third prize winners in each of four categories receive ATARI products. The first category, *Consumer*, has larger prize values, reflecting our commitment to the home computer user:

1 Consumer (Entertainment and Personal Interest and Development) prize values*

1st prize	$3,000
2nd prize	$2,000
3rd prize	$1,000

The other three categories:

2 Education

3 Business & Professional Applications/Personal Finance & Record Keeping

4 System Software

each have prize values* of

1st prize	$2,000
2nd prize	$1,500
3rd prize	$750

The closing date for eligibility for the 1983 grand prize — $25,000 in cash — is October 1, 1983. To request an APX Program Submission Packet, containing complete instructions for submitting programs, write APX. This contest is void where prohibited by law. Programs submitted by ATARI employees or their families aren't eligible for these contests.

*Based on manufacturer's suggested retail prices.

Hold onto this catalog. We're overflowing the capacity of our catalog. We've already condensed some program descriptions, but we may be reorganizing the catalog futher because of the large number of programs we now carry. So, you'll want to hold onto this issue to be sure of having a complete rundown to date of available APX programs.

Contest Rules

1. Only programs accepted by the ATARI Program Exchange are eligible for the contest.

2. A program is eligible for the prizes in the category in which it is accepted. ATARI determines this category.

3. A program is eligible for the quarterly prizes awarded in the quarter in which it is first accepted and for the grand prize of the contest year in which the quarter falls.

4. A program qualifies only once for a quarterly prize and once for a grand prize. Revisions and improvements do not qualify a program for another prize in this contest.

5. A program is judged on a variety of factors by a panel of judges selected by ATARI. The judges consider a program's:
   a. Human engineering
   b. Originality
   c. Ease of use
   d. Implementation
   e. Documentation
   f. Interest level

6. ATARI employees and their families are not eligible for the contest.

7. ATARI pays for shipping prizes anywhere within the United States. Foreign winners are responsible for any additional shipping charges.

8. The decisions of the judges are final.

Personal Finance & Record Keeping
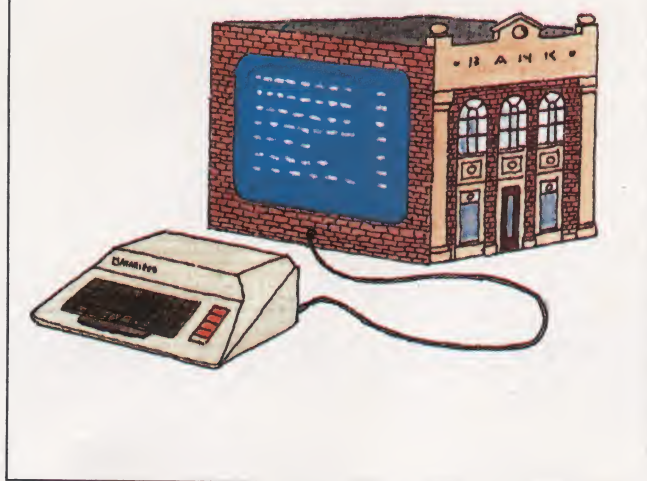
BOWLER'S DATABASE, REV. 2
by Jerry White

Recommended for bowlers/Written in BASIC

Track individual weekly bowling scores and print scores and averages

BOWLER'S DATABASE is a very friendly, easy-to-use program for keeping track of your bowling scores throughout the season. You enter your weekly scores for your first, second, and third games, using a separate data diskette or cassette for each bowler in your family or each member of your league. To see how you're doing, you request summary and detailed reports. The summary report contains your highest, lowest, and average scores bowled in the first, second, and third games. It also shows your highest, lowest, and average three-game series and your overall game average. The detailed report lists all your game and individual series totals by week.

BOWLER'S DATABASE gives you permanent, detailed records of your bowling performance. It makes comparisons from one season to the next, or from one league to another, a simple task! Revision 2 lets you store scores greater than 255, and it contains a minor display change.

The author invites written questions and comments.

REVIEW COMMENTS
This program's design is excellent. The calculations are simple, but the program is useful for those tracking their scores over an extended period of time.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
Additional diskettes for storing data

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10091
Diskette (810)	24K	$15.95	APX-20091

Personal Finance & Record Keeping

FAMILY VEHICLE EXPENSE
by Jerry Falkenhan

Recommended for ages 18 and up/Written in BASIC
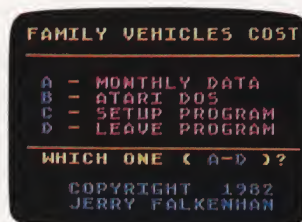
Track up to nine monthly costs for six vehicles

Today the rising cost of owning an automobile affects every family. You need to budget your fuel, insurance, repairs, and general maintenance. With FAMILY VEHICLE EXPENSE, you can keep track of six vehicles in nine expense categories over the course of twelve months. You can also calculate and store the depreciation, loan or lease status, and license fees on your vehicles.

You use your own blank diskettes to store your data. The program uses a series of menus to review, enter, change, or delete information on one or all of your cars in any month. This automatically loading program lets you keep records on payments with ten credit cards. It converts liters to gallons automatically and lets you record twelve fuel entries per vehicle per month. If you enter your odometer readings for at least two fill-ups, FAMILY VEHICLE EXPENSE automatically calculates your cost per mile and miles per gallon for each vehicle for each month. You can use the print option at any time to create copies of your entries or to obtain summary reports. You can even watch to see when your cars need a tune-up.

The author invites written questions and comments.

REVIEW COMMENTS
Everyone will find this very user-friendly program helpful.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing data

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20128

A call for programs highlighting the 1984 Olympics

Because the ATARI Home Computer is the Official Home Computer of the 1984 Olympics, we'll be paying special attention to Olympics-related programs. All programs submitted to APX between now and October 1, 1983, that focus on the summer or winter Olympic games are eligible for a bonus prize in our winter 1983 judging. Here's a chance to win an all-expense paid trip for two to the Summer Olympics in Los Angeles, plus hotel accommodations, and two three-day passes to the games, which will take place between July 27 and August 13, 1984.

In addition to a bonus prize, authors of Olympics-related APX programs can benefit from the extensive promotions and advertising planned by Atari throughout 1983 and 1984 to highlight its sponsorship of the Olympic games. These APX programs can receive even greater exposure to potential buyers than our normal broad coverage.
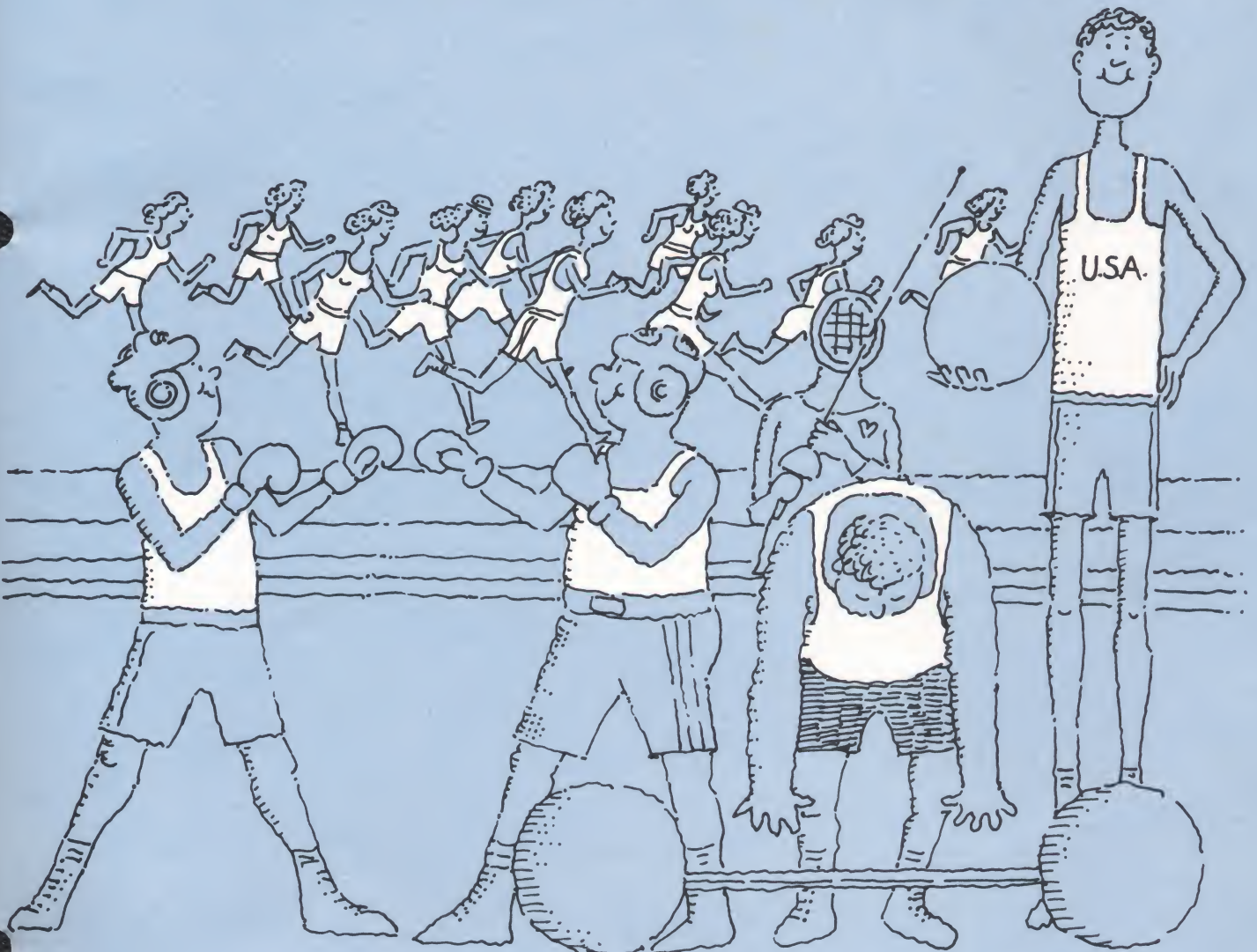
While we want to see traditional action games, we're especially interested in programs stressing the strategic or instructional elements of Olympic games. For example, including a handicapping feature in an action game can add another dimension to your program. We're also looking for programs in all categories, not just in Entertainment. An example of a different Olympics program would be a data base for tracking the results of each stage of each event, or for predicting future outcomes. To write these kinds of programs, you'll need a good understanding of the particular sport or sports involved.

We'll be giving special consideration to the summer games, but we'll also consider programs related to winter Olympic sports. The summer games are:

- Archery
- Track & Field
- Basketball
- Boxing
- Canoeing
- Rowing
- Cycling

- Equestrian
- Fencing
- Football (Soccer)
- Yachting
- Gymnastics
- Handball
- Field Hockey

- Judo
- Modern Pentathlon
- Shooting
- Swimming
- Volleyball
- Weight Lifting
- Wrestling

Demonstration sports (to become Olympic sports in 1988) are:

- Baseball
- Tennis

The winter games are:

- Skiing: Alpine, Nordic, Ski Jumping
- Biathlon (Cross-Country and Shooting)
- Bobrun
- Luge
- Ice Hockey
- Speed Skating
- Figure Skating: Single, Pair, and Ice Dancing

Start thinking about some strategy or instructional games along these lines and look for more details about our special Olympics judging in the spring APX Product Catalog, due out in early March 1983.
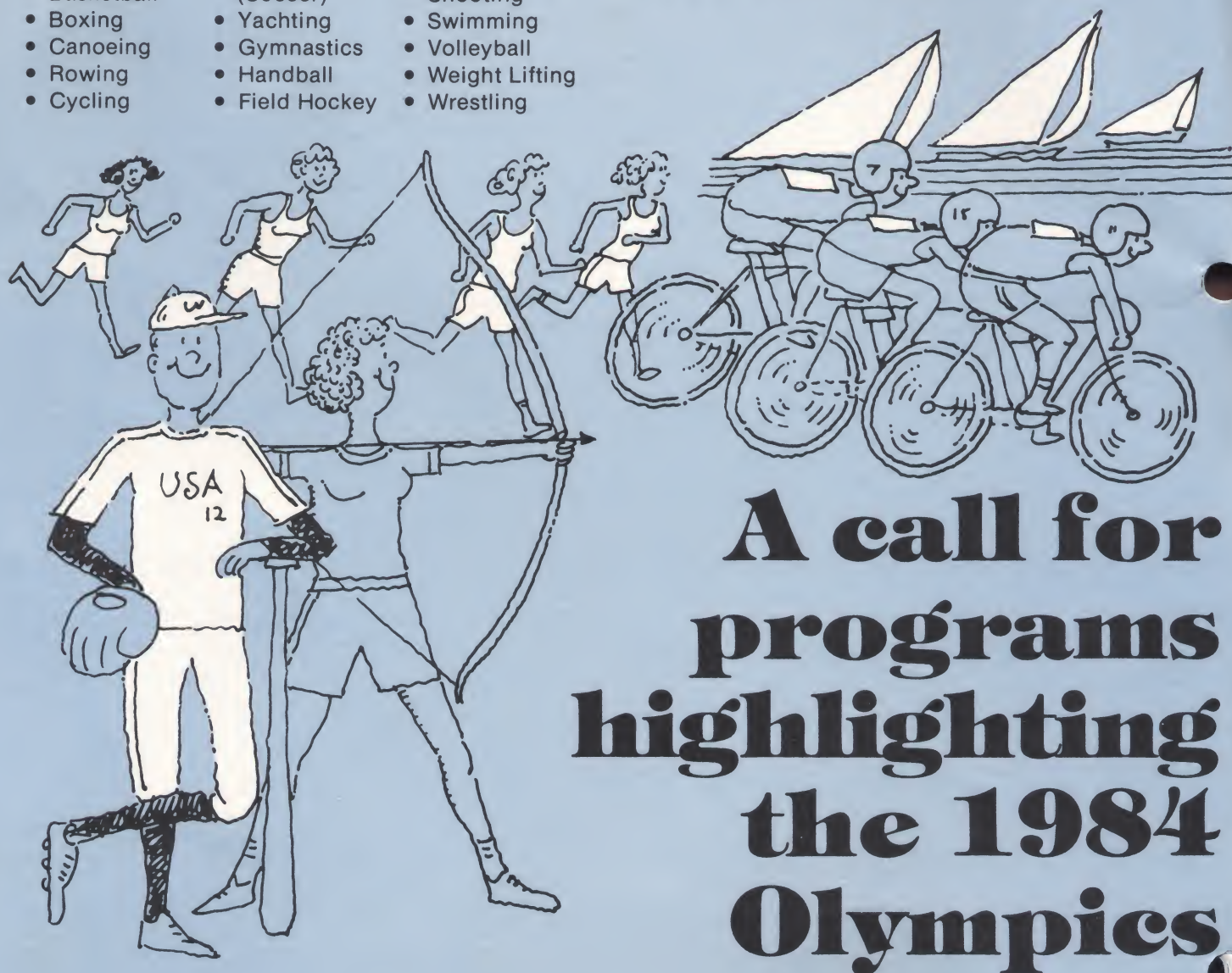
A call for programs highlighting the 1984 Olympics

FAMILY CASH FLOW, REV. 2
by Jerry Falkenhan

Recommended for ages 18 and up/Written in BASIC

**Track income and expenses
and print reports**

Have you ever wondered where your money is going? How about the time you could have written off more on your taxes, if only you'd had records from January to see what you had purchased? Can you remember your gas and electricity expenses for February? Perhaps you're wondering whether you're making enough each month to afford payments on a new car. With FAMILY CASH FLOW, you can answer all these questions and many more. This friendly, easy-to-use program can track as many as 125 expense entries in 13 categories and 25 income entries in 5 categories each month. It accommodates households with annual incomes and expenses up to $999,999.99.

You select and perform activities in this automatically loaded program through a series of menus and prompts. You use one option to display an overview of monthly income, expenses, and variance between the two items, along with totals for the year. You use other options to add, modify, or delete expense and income entries (entries can be up to 15 characters long) in any budget category for any month. The program comes with suggested budget categories for both income and expenses. However, you can change these categories to meet your own needs. Categories can be up to 15 characters long.

You can display on your TV screen or print two kinds of reports. Yearly and monthly summary reports show total income or expense by budget category. Monthly detail reports list the individual entries for each budget category under either income or expense. Revision 2 adds two new screens for viewing accumulated totals for income and expenses.

The author invites written questions and comments.

REVIEW COMMENTS
This program is easy to understand. The error checking and human engineering are very good. The program has many printing options, making it especially useful.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20080

FAMILY BUDGET
by Jerry Falkenhan

Recommended for ages 17 and up/Written in BASIC

**A budget analyzer for use
with FAMILY CASH FLOW**

Did this winter's utility bills send your finances into a tailspin? If so, it might be time for FAMILY BUDGET, a program that uses income and expense information from FAMILY CASH FLOW to help you set up a design for practical financial planning.

This automatically loaded program uses a series of menus as a guide. From the main menu, you can review already established budgets, change entries, print a budget, or set up a budget for future use. Each of these options leads you to an in-depth analysis of your month-by-month income and expenditures. For example, if you select the Review Budgets option, you may see yearly or monthly displays of one or all of your entries. You review, among others, budgeted expense vs. actual expense in any or all months. You can make changes in budgeted amounts and record them on your diskette. As in FAMILY CASH FLOW, FAMILY BUDGET lets you enter income and expense budget amounts totaling $999,999.99. FAMILY BUDGET uses your category names already established by FAMILY CASH FLOW.

After you enter at least two months of information, you're ready to set up a budget. You fill in budget data using your actual expenses as a guide. A built-in averaging function provides information for months with no available data. FAMILY BUDGET then displays a month-by-month and category-by-category projection with a prompt asking if the information is correct. You check your figures and correct them if necessary.

FAMILY BUDGET provides a practical means for arranging your finances. You may review and revise your set of budgets at any time. Maybe your income tripled last year, requiring a change in investments!

The author invites written questions and comments.

REVIEW COMMENTS
FAMILY BUDGET is an excellent complement to FAMILY CASH FLOW. The screen displays seen during program loading are outstanding examples of "user friendliness" in a consumer-oriented program.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
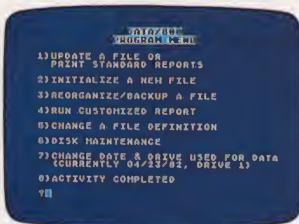FAMILY CASH FLOW (APX-20080)

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20108

DATA BASE/REPORT SYSTEM
by James W. Burley

Recommended for experienced data base users/Written in BASIC and machine language

A multifeatured information organizer and reporter

If you've ever used a data base manager on a large computer system, you'll appreciate the many features of DATA BASE/REPORT SYSTEM. This general-purpose system for ATARI 800 Home Computers creates and maintains records having up to ten units of information ("fields"), with a maximum field length of 100 characters and a maximum record length of 255 characters. The total number of records you can store varies with record key size (a key being the unique identifier for each record) and available computer memory. Generally, you can store about 1300 records having a five-character key on a system with 40K of memory.

You use the main program to create a new file; add, update, and remove records; sort the file; and print reports. Auxiliary programs reorganize the data files to free unused diskette space; redefine the file by adding fields, modifying field sizes, or changing field headings; delete old files; and print special reports.

Search criteria for locating records include "equal to," "equal to or less than," "equal to or greater than," "between . . . and . . .," and "all." You can apply your specified search criterion to one or more fields, and you can search on partial field values. The system produces two standard reports. Vertical reports use no field headings, and each field in a record prints on a separate line. Horizontal reports use headings, and fields print across the page for each record. The report writer lets you modify the order in which fields print, sum up numeric fields, and find your records using other than normal keys. These and other features make DATA BASE/REPORT SYSTEM a really versatile data base management system for your ATARI 800 Home Computer.

REVIEW COMMENTS
You need some data base knowledge to use the program; it's a bit complex, but all the features are worthwhile. The print formatting and file reorganization features are very useful. The sort and search routines, written in assembly language, work quickly.

The user manual is VERY GOOD for experienced data base users.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for data

OPTIONAL
ATARI 825 80-Column Printer or Epson printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20134

Personal Finance & Record Keeping

RECIPE SEARCH 'N SAVE
by Edward Lehmann

Recommended for ages 14 and up/Written in BASIC
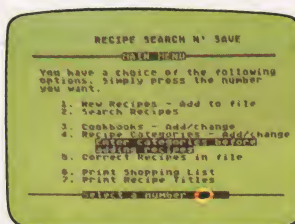
Classify, store, and print recipes

How can you come home from work, clean the house, feed the kids, dog, bird, and cat, and still have time to plan an elegant meal for guests? We can't provide the total solution, but here's a program that will get you started. With RECIPE SEARCH 'N SAVE, you can quickly find a recipe that uses the ingredients on hand in your refrigerator. You won't have a cleaner house or a well-fed cat, but you will have your meal planning under control.

With RECIPE SEARCH 'N SAVE, you can:
- store up to 84 recipes per diskette (Use your own blank diskettes for storage.)
- search for recipes using up to two ingredient names and two recipe classifications
- store up to 26 recipe classifications and 8 cookbook titles
- print recipes
- print an alphabetized list of your recipes
- edit recipes
- print an alphabetized shopping list for up to ten selected recipes

A series of program menus guides you through the activities. For each new recipe, you can enter a new recipe name, cookbook title and page number, up to ten ingredients, recipe instructions, and up to four recipe classifications. What a simple way to organize your kitchen and plan your food budget!

The author invites questions by telephone and mail.

REVIEW COMMENTS
The shopping list feature is a great idea. The search capabilities are comprehensive. The program could be easier to use. Program menus are redundant and the prompts sometimes are inconsistent.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing records

OPTIONAL
ATARI 825 80-Column Printer or Epson MX-80 Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20114

DATA MANAGEMENT SYSTEM
by Ronald and Lynn Marcuse

Recommended for ages 15 and up/Written in BASIC and machine language

An information organizer and reporter for brief items

Here's a data management system ideally suited for short records, such as record, tape, and book catalogs; telephone and address directories; and inventories. Menus and prompts guide you through all input activity. First, you define the characteristics of your file. You enter the file name, the number of fields (up to 8), the field headings (up to 11 characters), maximum field value (up to 30 characters), and the editing desired on a field's value (none, numeric, date, or dollar edits). You can store records as large as 140 characters. From then on, you can add, update, and remove records. You can search your file on any field using whole or partial search keys. Valid search terms are less than or equal to, equal to, greater than or equal to, and range. You can display your search results on the video screen or print them on your printer (up to 130 characters), specifying either complete or partial records. Finally, you can sort your file on any field, specifying either ascending or descending ASCII values for characters in that field.

The authors invite questions and comments by telephone.

REVIEW COMMENTS
For a small data management system, this program is well designed and easy to use. Files remain on disk (except during sorts), making possible a fairly large base. The assembly language sort is fast. You can search on only one key at a time.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or Epson MX-80 Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20059

WEEKLY PLANNER
by Ronald and Lynn Marcuse

Recommended for teenagers-adults/Written in BASIC and machine language
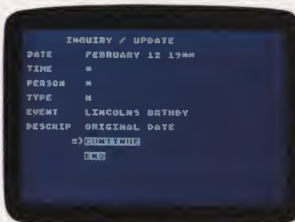
Store and print dates and appointments

Your accountant wasn't too thrilled when you showed up at 2 p.m. for your 1 p.m. conference yesterday (at least you got the day right). You need help! With WEEKLY PLANNER you can store important dates, appointments, and other time-related events for any period between 1981 and 1999.

For each event, you create a record containing information such as the year, month, time, person, and event. Many people can store their records in one file, yet print calendars and appointment listings specific to one person. For recurring events, such as monthly mortgage payments and holidays, you can use the "wild card" feature to enter your information once and have the system automatically record the event for the appropriate days, months, person, and so on. You can locate records by year, month, day, time, or person. For example, you can find all the records for December for your son. You can then display abbreviated versions of as many as 20 records at a time or complete records, one at a time. You can also print your results as appointment listings (three days per page) or as a monthly calendar. You can enter as many events per day as you wish and display them on your TV screen; however, the program prints only the first four events per day on the formatted calendar. You can revise, add, and remove records as needed. How many records you can store depends on how much free memory your system has. A system with 32K of RAM can store 420 records; one with 48K of RAM can handle 575 records.

The authors invite questions and comments by mail and telephone.

REVIEW COMMENTS
The human engineering in this program is excellent. The wild card for searches is very powerful.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20079

FINANCIAL ASSET MANAGEMENT SYSTEM
by Robert A. Waldman

Recommended for ages 16 and up/Written in BASIC

Organize your asset records and print reports

Are you looking for a systematic way to organize all the niggling details involved in keeping track of your financial assets? No sooner said than done! The FINANCIAL ASSET MANAGEMENT SYSTEM helps you evaluate the status of all your holdings by creating records for each asset and producing printed financial reports. Your assets can be of any type, such as stocks, bonds, real estate, collectibles, bank accounts, funds, and certificates. Using a series of menus, you can track as many as 99 different assets per file, and you can create as many files as you need. Each asset can be as large as $10 million. The system values your portfolio and prints three kinds of reports. One kind orders all your assets in a file alphabetically and lists each asset's yield, profit, and annual payout, among other information. This report also prints subtotals by asset type. The second kind sorts all your assets in a file into five different lists: by value, profit, payout, yield, and percent profit. The third report tabulates all your dividends and interest paid on a year-to-date (YTD) basis. And for your convenience, you can also print data input forms to record information manually until you're ready to update your computer files.

The author invites written questions and comments.

REVIEW COMMENTS
This is a comprehensive financial record keeper. However, you must do your own analysis. The printed reports are very well designed. Clearly, a lot of work went into this program, and the results are very professional.

You need to use the manual along with the program, especially the first few times. The user manual is EXCELLENT.

REQUIRES
ATARI BASIC Language Cartridge
ATARI 825 80-Column Printer only

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$29.95	APX-20042

Business & Professional Applications

CALCULATOR

Recommended for ages 15 and up/Written in machine language

A programmable calculator with storing and printing features

Now you can use the best qualities of a calculator on your ATARI Home Computer. CALCULATOR contains 145 functions ranging from simple arithmetic operations to programming commands that let you write your own programs. You can also work complex conversions and watch the stack and memory displays.

Once CALCULATOR automatically loads into computer memory, you can choose five basic categories of operations: conversions, fundamental functions, algebraic and trigonometric functions, statistical functions, and financial functions. After you've finished your calculations, you can print your results. Other commands let you store and retrieve programs as well as data.

The CALCULATOR screen consists of several areas, each represented by a different color. The stack and memory displays share the center of the screen. Along the bottom of the screen is a prompt line, the space for your entries. You can store these entries in the calculator's memory. A scroll area above the prompt line displays your last seven entries. The CALCULATOR printer option can print everything displayed in the scroll area.

REVIEW COMMENTS
This program is comprehensive, but complex to use. CALCULATOR is programmable, making it useful for repetitive calculations. The user manual includes practical examples for ham radio operators for long-term purchases. Errata sheets list the manual's many mistakes.

REQUIRES
No required accessories

OPTIONAL
An ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$29.95	APX-20130

RPN CALCULATOR SIMULATOR
by John Crane

Recommended for ages 12 and up/Written in BASIC

A Reverse Polish Notation calculator

Your kid has made off with your Hewlett-Packard calculator to get through her trig test. You're going through RPN withdrawal! The RPN CALCULATOR SIMULATOR can turn your ATARI Home Computer into an RPN calculator, so you can perform simple or complex mathematical operations without having to write a BASIC program.

Reverse Polish Notation (RPN) is a method for doing mathematical operations based on a stack organization. For example, to add 4 and 5 on an RPN calculator, you press the 4 key, the ENTER key, and the 5 key. Then you indicate the kind of operation you want by pressing the ADD key. Many people tend to prefer this approach over that of using parentheses for doing complex calculations.

Using RPN CALCULATOR is easy. You enter the value or values you want to work with and the command for the operation you want to perform. The results display in the appropriate stack and memory registers. The program's display screen contains four areas of information: (1) the stack of five registers; (2) the twenty memory registers; (3) command syntax reminders; and (4) the value and command input area. You can use RPN CALCULATOR to perform functions using only one value (for example, sine, cosine, and logarithms) and for those requiring two values (for example, addition and subtraction). You can obtain measurements in either radians or degrees. RPN CALCULATOR supports four kinds of calculator functions: (1) system commands, such as clearing registers, and printing register contents on the system printer; (2) stack operations such as rolling the stack up or down, and swapping the contents of any two registers; (3) mathematical functions such as arithmetic operations, logarithms, square roots, and trigonometric functions; and (4) some statistical operations, including arithmetic means and standard deviations.

The author invites written questions and comments.

REVIEW COMMENTS
The statistical capabilities are very useful. Programmability would be a welcome feature.

The user manual is GOOD for explaining how to operate the program. However, it doesn't discuss the advantages of RPN.

REQUIRES
ATARI BASIC Language Cartridge

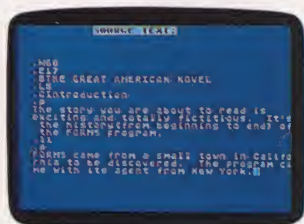### OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10105
Diskette (810)	24K	$22.95	APX-20105

TEXT FORMATTER (FORMS)
By Dale Yocum

Recommended for teenagers-adults, depending on text editor used

A basic text formatter for use with a text editor

How often have you typed a report or letter and then wished you'd chosen a different layout? When were you last satisfied with your first draft? If you're still using a typewriter, revising your document means retyping your text. But with FORMS and a text editor you can change line spacing, line length, left-hand margin, paragraph indention, and more without re-keying your text. You set up the format by entering simple codes along with your text. For example, you enter ".C" before text you want to center. You use a text editor to type in your FORMS codes and text and to store your data file. You can use almost any editor that produces a text file on cassette or diskette, with or without line numbers, for example, the ATARI PROGRAM-TEXT EDITOR* (APX-20075) or the ATARI Assembler Editor Cartridge (CXL4003). When you're ready to print your text, you run the FORMS program, which asks whether you want to print your entire document (data file) or only selected pages — a convenience when you revise only one section or a few pages of a large document.

REVIEW COMMENTS
Anyone familiar with DEC's formatter, RUNOFF, or the University of Waterloo's formatter, SCRIPT, can easily master FORMS. Most APX documentation is formatted with FORMS.

Users accustomed to text formatters on larger systems won't be able to get as many special effects with FORMS. For example, FORMS doesn't right justify or easily create columnar text, and it has no hyphenation, indexing, or footnote capability. When used with the proportional character set, it produces a ragged right margin and columns misalign.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
A compatible text editor
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10002
Diskette (810)	24K	$22.95	APX-20002

*ATARI PROGRAM-TEXT EDITOR** is a trademark of Atari, Inc.

DISKETTE MAILING LIST
by William Bartlett

Recommended for ages 16 and up/Written in BASIC and machine language
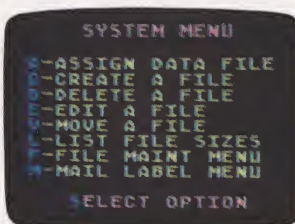
A multipurpose data manager and label program

Here's a mailing list program that can handle junior's kindergarten class list, mom's client list, and dad's golf club membership list. And this program can accommodate their growing needs. The number of records a file can contain is limited only by available diskette space, not by computer memory, and you can store many different files on one diskette. DISKETTE MAILING LIST can handle very large records having as many as 127 units of information (called "fields"), with each unit as large as 120 characters.

You select program functions from menus. First you define the kinds of information you want to include in the records for a file, and then you add the records themselves. You can revise, add, and remove records as needed. You can sort and re-sort your records in a file by any combination of fields with a total length of up to 185 characters. And you can print some or all of your sorted records according to your specifications for which fields to print and their order. Each record prints on one line, which can be as wide as 132 columns. You can also create custom-tailored mailing labels accommodating single and multilabel forms. Labels can contain information from records and text you specify when you request the labels. How about adding seasonal messages to your labels? Users of the ATARI Mailing List (CX4104) can easily convert their cassette or diskette records with a transfer program included in DISKETTE MAILING LIST.

The author invites questions and comments by telephone.

REVIEW COMMENTS
The option of using as many as 127 fields extends this program beyond printing labels. You can use it for Christmas records, club memberships, and so on.

You need a printer to use DISKETTE MAILING LIST fully.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or equivalent

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$22.95	APX-20112

FOG INDEX
by Ingrid Langevin

Recommended for ages 13 and up/Written in BASIC

NEW

Winter 1982 — 2nd
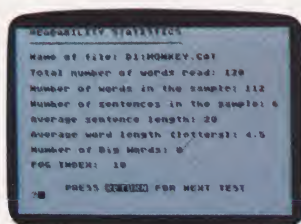
Use the FOG Index to analyze text readability

Many editors and writers rely on the Gunning FOG Readability Formula, commonly known as the FOG Index, to test whether text is geared to the appropriate reading level. The FOG formula analyzes reading level based on word complexity (number of syllables) and sentence length. FOG INDEX automates this analysis, saving you both time and effort.

This easy-to-use program guides you through all the options with a series of questions and prompts. You can analyze any text file created by a word processor using ATARI DOS and stored on cassette or diskette. Word processors known to be compatible with FOG INDEX are the ATARI Word Processor (CX404), Text Wizard™, and the ATARI PROGRAM-TEXT EDITOR (APX-20075), available through APX. You can also type a 100-word text sample directly into computer memory without using a text editor and then analyze it. For any text file, you can analyze a 100-word sample, your own specified number of words, or the entire file, and you can analyze up to thirty files on one diskette in sequence. During the analysis, the current word being read, the number of big words encountered, and the total number of words read so far display on your TV screen. A print option lets you print the big words and the readability statistics for future reference. In addition to the FOG Index level, the statistics include the file name, number of words read, number of words included in the computation, number of sentences, average number of words in a sentence, average number of letters in a word, and the number of big words.

The author invites written questions and comments.

REVIEW COMMENTS
FOG INDEX will appeal to writers and educators concerned with the reading level of text. The FOG Index has its own followers who prefer not to use the Dale-Chall method. This program is strictly utilitarian; it has no graphics and little sound.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or equivalent printer
A text editor using ATARI DOS (see description)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$15.95	APX-20185

TEXT ANALYST, REV.2*
by Ingrid Langevin

Recommended for students, teachers, publishers, editors, and writers/Written in BASIC and machine Language

3rd Fall 1982
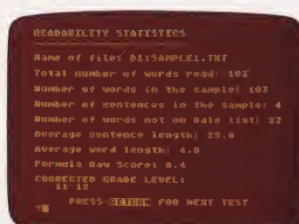
Use the Dale-Chall method to analyze text readability

Until now, if you wanted to evaluate a piece of writing for its reading level, you could do one of two things. You could rely on simplified methods, such as the FOG index. Or you could reconcile yourself to a lengthy analysis for a more accurate analysis, such as using the Dale-Chall Readability Formula, which requires matching each word of a 100-word sample against the 3000-word Dale list, computing the average sentence length, weighting the variables, and working them into the Dale equation.

Now you can have the best of both worlds. TEXT ANALYST uses the Dale-Chall method to analyze a 100-word sample, your own specified number of words, or the entire contents of one or more files created with the ATARI Word Processor (CX404) or with Text Wizard™. It computes the grade level and relevant statistics (such as average sentence and word length), and displays and prints the results in less than two minutes (for a 100-word sample). You can use the printed list of words that don't match the Dale list as a check for spelling errors in your text, and both the statistics and the list of non-Dale words can help you analyze your writing style.

Using TEXT ANALYST is easy. After it automatically loads into computer memory, you type the name of the text files you want analyzed and TEXT ANALYST takes over from there. As TEXT ANALYST reads and compares each word, the total number of words read, the number of matched words, and the words not found on the Dale list display on the TV screen. You may also choose to print the list of unmatched words and the readability statistics for future reference. All it takes is one or two uses of TEXT ANALYST and you won't be able to get along without it. Revision 2 lets you analyze several files in sequence and specify the size of the text sample.

The author invites written questions and comments.

REVIEW COMMENTS
Although TEXT ANALYST is in the Business/Professional category, students and teachers will also find the program a good tool.

The user manual is VERY GOOD. It includes instructions for creating your own text files.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer
ATARI Word Processor or Text Wizard

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$15.95	APX-20142

ENHANCEMENTS TO GRAPH IT*
by Howard D. Siebenrock

Recommended for ages 12 and up/Written in BASIC

Save plots and charts created by ATARI GRAPH IT

If you own the ATARI GRAPH IT program, you know you can create your own bar charts, pie graphs, two- and three-dimensional plots, and polar plots on your TV screen, and you can use your Joystick Controller to find values of specific points on the two- and three-dimensional plots. ENHANCEMENTS increases the usefulness of GRAPH IT. With ENHANCEMENTS you can save your work on diskette or cassette and later redisplay it. Thus, after spending hours creating plots and charts, you can redisplay them without waiting for them to plot again or without re-entering the data. ENHANCEMENTS also lets you select degrees or radians for plotting the trigonometric functions in the two- or three-dimensional plots, and the function you use displays below the plot.

Incorporating these features into GRAPH IT is simple. You merge programs from ENHANCEMENTS with the cassette GRAPH IT programs and then save the merged programs. From then on, you use these enhanced GRAPH IT programs as you would the original versions, except that you now have additional features readily available.

The author invites written questions and comments.

REVIEW COMMENTS
The menus are similar to those used in GRAPH IT.

The saved plots load quickly.

The programs have only marginal error trapping.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
ATARI 410 Program Recorder
GRAPH IT (CX4109)

OPTIONAL
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$15.95	APX-20074

*Indicates trademark of Atari, Inc.

HYDRAULIC PROGRAM (HYSYS)
by William L. Rice

Recommended for people involved with hydraulics/Written in BASIC

Calculations for sizing hydraulic systems and components

Your racing team wants to speed up tire changes in the pits. Manually jacking up each side of the car currently takes about 3 seconds. You suggest a little DC-powered hydraulic unit might be the answer. You happen to have a unit in your low-rider car you'll remove for team spirit. The unit puts out 4.5 gallons per minute at 2500 pounds per square inch. You also have a 1.5-inch diameter cylinder to go with it. Not having the least idea whether this will raise the car at all, much less do so faster, you tell everyone to take a lunch break. Now get out your ATARI Computer and use HYSYS to find the answer!

Containing 14 system calculations, HYSIS has two menus, one for hydraulic cylinders and one for motors and pumps. It also displays a printable system tally sheet for each menu's parameters. You can display the tally sheet at any time, change one of the parameters, and redisplay the tally sheet with all selected parameters updated to reflect the new input. You can also erase the tally sheet and start over. Intended for people involved in designing hydraulic systems, HYSYS quickly solves all the time-consuming calculations normally needed to size hydraulic systems and components. In fact, the program lessens the technical knowledge needed to design a hydraulic system. With the data the program calculates for you, you can often simply specify the support equipment meeting those specifications. (P.S. Your little power unit will save both time and effort. The pit team was mighty impressed!)

The author invites written questions and comments.

REVIEW COMMENTS
This program is useful only for those already having some knowledge of hydraulics. The automatic updating of the tally sheet is very helpful. You can change one parameter and immediately see the effect on the rest of the system.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20066

REAL ESTATE CASH FLOW ANALYSIS
by Richard K. Lindgren

Recommended for real estate investors/Written in BASIC

NEW

Evaluate property investments

You don't have to be a financial wizard to invest successfully in real estate. The main concerns in property investments are the cash generated and required, the tax consequences, and the relative worth of the property compared to other investments. Your ATARI Home Computer and REAL ESTATE CASH FLOW ANALYSIS can help relieve you of the tedious mathematical calculations needed to evaluate these matters and they can organize the information required so that you can focus on "what if" questions. What if interest rates change? What if my vacancy rate goes up? What if I have to pay an extra ten percent for the property?

The program consists of three sections designed to assist both new and professional investors in analyzing the costs and benefits of income-producing property. The Data Editor guides you in compiling, documenting, and modifying relevant analysis data. The Cash Flow analysis section computes before-tax and after-tax cash flows, profitability measures, and projected net worth for an investment property. The Amortization section computes monthly payments, interest rates, principal amounts, and terms for self-amortized loans. In a typical session, you might use the Amortization section to calculate alternative loan arrangements, and then feed this information into Data Editor to create and document one or more trial data files, which you in turn feed into the Cash Flow section for analysis. One analysis might suggest a change to one or more of the factors, which requires returning to one of the other programs. You can print all the analyses, and the package includes a sample application.

The author invites written questions and comments.

REVIEW COMMENTS
This program quickly indicates whether you'll make or lose money, but the results are only as good as your estimates (e.g., vacancy rate, inflation rate).

The user manual is EXCELLENT in its detailed explanations and examples. Knowledge of investment terminology is necessary.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20169

STOCK MANAGEMENT
by Greg Thrush

Recommended for ages 18 and up/Written in BASIC
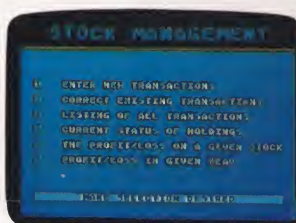
Organize stock transaction receipts and print reports

Do you have trouble organizing all your stock transaction receipts? With STOCK MANAGEMENT, you record the information from your trade confirmation receipts once and the program then takes care of all your record-keeping chores and also performs a variety of analyses. STOCK MANAGEMENT is ideal for serious traders looking for an efficient way to monitor their transactions.

The program is both fast and enjoyable to use. A series of easy-to-follow menus and prompts guides you through entering and updating information for these transactions: buy, sell, dividends, stock dividends, stock splits, and nontaxable distributions. A system with 32K of computer memory can maintain as many as 150 transactions, including 100 different stocks with 30 listings of the same stock. A system with 40K of computer memory can handle 300 transactions. For each transaction, you record the stock, its symbol, the transaction type and date, the exchange, and the price/dividend, quantity, and commission or other expense involved. The program automatically updates your file whenever you add new or revised information, and you can then display or print several kinds of reports. For example, you can request an alphabetical listing by stock of all transactions in a file; the current status of your holdings, including the current value of each stock held and the total value of all stocks held; a summary of all transactions for a specific stock, along with its equity, if currently held, or its profit or loss, if sold; and a capital gains summary of transactions in a given year. With STOCK MANAGEMENT, tracking your portfolio becomes a piece of cake!

The author invites written questions and comments.

REVIEW COMMENTS
This program is transaction-oriented and simple to run. It supports a concise set of commands specifically geared for historical tracking of stock portfolios.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or Epson 80-Column Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20147

MESSAGE DISPLAY PROGRAM
by Dennis Harkins

Recommended for ages 12 and up/Written in BASIC

A multifeatured video
message system

Business and professional people often need a graphic, automated means to present information in a meeting. Using video aids in stores can often free sales personnel to handle more customers than they otherwise could. These are but two of the kinds of individuals who can benefit from the MESSAGE DISPLAY PROGRAM.

This handy program creates up to fifty pages of automatically or manually cycled messages you can display on your computer's screen or over a closed-circuit television system. Containing many of the features of a commercial video message generator, the program is easy and fun to use. Each page can accommodate either ten or twenty automatically centered lines, depending on whether you select large or small characters. Each line can hold as many as twenty characters and you can edit your messages. MESSAGE DISPLAY comes with eight built-in combinations of letter and background colors, or you can specify your own combinations. You can also edit the colors chosen. Each message can also display the characters in as many as three colors. You can further dress up your messages with fancy borders and dividers and with a highlighted title at the bottom of each screen. You can even change the speed at which the messages display, if you wish. And should you want to create titles for videotape productions, the program lets you manually control screen cycling while your computer is connected to a switcher and feed the titles into a live program. The diskette version of MESSAGE DISPLAY also includes a demonstration program containing ten screens (not available on the cassette version).

The author invites written questions and comments.

REVIEW COMMENTS
This is a useful tool for presentations, unattended demonstrations, lectures, TV stations, and so on. You need an ATARI 800 Computer if you plan to connect your system to another source for displaying the messages.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$15.95	APX-10153
Diskette (810)	40K	$15.95	APX-20153

ISOPLETH MAP-MAKING PACKAGE
by Clyde Spencer

Recommended for teenagers and up/Written in BASIC

Create and display your
data as maps

Here's a computer mapping package that creates isopleth maps without the tedious and often subjective hand-contouring usually required. An "isopleth" is a line drawn on a graph or a map connecting all points of equal value. Topographic contour maps are one example of this kind of map. Isopleth maps are useful for grouping randomly sampled data representing a continuously varying property, such as elevation or temperature, within an area.

ISOPLETH MAP-MAKING comprises three programs in menu format. With these programs you can create simple isopleth maps from randomly spaced sample points. You can enter as many as 99 X,Y,Z sets of coordinates and produce a 40×20 printer listing and/or a ten-color annotated screen display. The printer listing uses values from one to nine. Since the program automatically creates nine ranges of values, the contour interval is one-ninth the range of Z-values. Because the main program can take as long as an hour to run, the package includes a plotting program to replot previously generated data files. The package also contains some colorful sample map displays.

REVIEW COMMENTS
The isopleth plotting part of the package takes between 45 minutes and an hour to complete, so you might as well fix yourself a snack and settle down with the latest issue of *THE ATARI CONNECTION™*.

The color plotting part of the package looks good. The sample data provided nicely demonstrates the program's capabilities.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20103

Personal Interest & Development

BANNER GENERATOR
by John Daigle & Steve Bittrolff

Recommended for ages 8 and up/Written in BASIC

Print one-liners up to 6 inches high and 80 characters long

HAPPY ANNIVERSARY, MOM & DAD! CLEAN YOUR ROOM!! How often have you wished for a dramatic way to make your point? With BANNER GENERATOR, you can turn out one-liners up to six inches high and as long as 80 characters. You can print messages in normal character intensity or extra dark (if you use an ATARI 825 80-Column Printer). You can vary both character height and character width. And you can select from three output methods — the message printed with one fill character (e.g., the character "#"), each output character printed using itself as the fill character (e.g., "A's" for the letter "A"), or a short word used as the fill character (e.g., the word "FAREWELL"). The message prints sideways down the paper like a ticker tape. In addition, you can reproduce banner-size ATARI graphics characters, although these characters can't be fill characters. The possibilities are endless!

REVIEW COMMENTS
Because of letter size, this program uses lots of paper and ribbon. These messages are popular with kids — even when the messages are reminders to do chores! With a little programming, you can use alternate character sets you've designed.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10040
Diskette (810)	16K	$15.95	APX-20040

SKETCHPAD
by Duane L. King

Recommended for ages 12 and up/Written in BASIC and machine language

A computerized doodle pad with storage feature

Remember the doodles you drew around the edges of your lecture and meeting notes? And what about those you sheepishly left on restaurant tablecloths? Now you can doodle on your computer! With SKETCHPAD you can draw designs until you run out of inspiration, and then store them on cassette or diskette for later work.

You create designs by using a Joystick Controller to position a cursor in the drawing area of the display. Then you type one- and two-letter commands in a command window. For example, you type a "B" in the command window to draw a box. Then, to indicate the box's lower left-hand and upper right-hand corners, you position the cursor in the appropriate locations and press the red trigger button. Viola! SKETCHPAD draws a solid box!

The program has 23 commands for drawing, coloring, and merging designs. You can draw points, lines, boxes, circles, lines radiating from a common point, and solid areas. You can create mirror images of designs in several ways — from left half to right half, upper half to lower half, or within the drawing area's four quarters. You can change the hue and intensity of four pen colors (one background and three foreground). All the colors in ATARI BASIC's 128-color palette (16 hues and 8 luminosities) are available, but your design displays in only four colors at a time. For example, if you change a pen's color to red, then all design elements already created with that pen change to red and new elements drawn with the pen also display in red. You can copy the design elements in one area to another area, and you can merge a design on the screen with one stored on cassette or diskette. Computer doodling... don't settle for less!

The diskette version contains sample designs not included on the cassette version.

The author invites written questions and comments.

REVIEW COMMENTS
Effectively translating the drawing commands of ATARI BASIC into graphical form, SKETCHPAD is easy to learn and has all the features of a good drawing tool, plus useful extras. The circles are a little irregular.

The user manual is EXCELLENT.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller
DOS 2-formatted diskette(s) for storing pictures

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10107
Diskette (810)	24K	$22.95	APX-20107

ASTROLOGY, REV. 1.1*
by Harry Koons and Art Prag
Recommended for ages 14 and up/Written in BASIC

Draw astrological charts based on birth date and birthplace

Ptolemy and Morinus, the famous Greek astrologers, had a much harder time computing the locations of the sun, moon, and planets than you will. With ASTROLOGY, the mysteries of the zodiac, planetary positioning, natal charts, and rising signs will unfold in your very own living room.

Once the program loads automatically into computer memory, you begin preparing your astrological chart. First you enter the exact time and place of birth. You designate the location as geographical coordinates. If you don't know this information, ASTROLOGY computes it for you by displaying either a world or United States map. A movable marker appears on the map, which you then position over the location of your birth. As the marker moves, the longitude and latitude register in degrees below the map.

After you've typed in the time (to the minute), date, and location of birth, ASTROLOGY takes over. The program processes your data and draws an astrological chart on the screen representing the earth, the zodiac, and the twelve astrological houses at the time of birth. Symbols of the zodiac appear on the lines (cusps) between each house. Each planetary sign displays in its proper house. ASTROLOGY also computes the relationships (aspects) of the planets in the houses. The program defines the symbols for the planets and the signs of the zodiac on a separate screen. You can easily access this table for quick identification of the symbols on the chart. Revision 1.1 increases the screen accuracy to plus or minus one degree for the entire century.

Once you have your complete chart, some simple interpretations are available in the manual. The computer has done its job.

The authors invite written questions and comments.

REVIEW COMMENTS
ASTROLOGY draws nice maps and charts very quickly.

The user manual is VERY GOOD. It includes suggested reading material for further astrological information. You do need additional reference material for a complete interpretation.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20078

GOING TO THE DOGS
by Michael Kirtley
Recommended for adults/Written in BASIC

A handicapping program for dog races

Would you like a way to project the outcome of races at the dog tracks? With GOING TO THE DOGS, you can make predictions based on past performances. The program's four main menu selections guide you easily through creating data diskettes to analyzing the races.

Using a blank, formatted diskette, GOING TO THE DOGS creates 714 records which you fill with statistics from a race track form. To enter this data, you follow a series of menus and screens requesting the names of the dogs and specifics of each race listed. The program saves up to eleven of the most current races for each dog. Once you've completed entering this data, you can either save or delete the information. You can create records for more than one racetrack.

When it's time to analyze a race, you enter the dog's name for each post position, the distance of the particular race, and the grade of the race. The program accommodates vacant post positions. Once you enter all eight positions, the program displays all positions and the corresponding dog names. Then it displays a point rating and ranking for each dog. You can print the results before placing your bets.

The author invites written questions and comments.

REVIEW COMMENTS
GOING TO THE DOGS is a well-written handicapping program for dog racing. Since grading systems vary from state to state, you need to replace some letter classifications with numbers. We make no guarantee you'll become a millionaire using this program!

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing data
A racetrack program

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20123

ADVANCED MUSICSYSTEM
by Lee Actor

Recommended for ages 11 and up/Written in BASIC and machine language

A comprehensive music composition tool

Mozart, Beethoven, and Bach never had it so good. With the ADVANCED MUSICSYSTEM, you can use your musical skills to their fullest. This program provides a complete range of possibilities, from listening to creating.

You select your activity from a menu of fourteen choices. The editing function is one of the most interesting. You enter a musical note by specifying various parameters, such as octave, duration, dynamic level, and articulation. Every time you enter a note, the program reproduces it through the television speaker and displays it on the screen, where it can be easily modified at any time. ADVANCED MUSICSYSTEM can play very complex rhythms and extremely rapid tempos. Once you create music, you can listen to as many as four independent voices in a 5 1/2-octave range. You can watch a piano keyboard playing the notes with each of the four voices appearing in a different color. With the ATARI Paddle Controllers, you can adjust the tempo while the music is playing. Built-in synchronization functions let you construct a tape with at least eight simultaneous voices using an external tape recorder.

ADVANCED MUSICSYSTEM lets you save music on a diskette, and merge files to create very large files. Depending on your system's memory size, you can store up to 6000 notes in a file. Using the automatic play feature, you may listen to the demonstration pieces included on the diskette.

The author invites questions and comments by telephone and mail.

REVIEW COMMENTS
This is a comprehensive package for people with a good knowledge of music. The program has many more outstanding features than can be described in this space.

The user manual is EXCELLENT. It discusses planning, entering, playing, and saving music, and how to connect your computer to your stereo system.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing music

`PAL`

OPTIONAL
One set of ATARI Paddle Controllers
Stereo cable
Tape recorder

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$29.95	APX-20100

BLACKJACK TUTOR, REV. 1.1
by W. H. Northrup

Recommended for adults/Written in BASIC and machine language
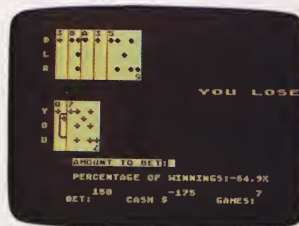
A tutorial to improve playing and betting strategy

Here's a game with more than entertainment as its purpose. It's also a tutorial designed to increase your mastery of blackjack playing and betting strategy. The training occurs in two stages. In the first stage, you learn basic blackjack strategy so that you can maintain roughly even odds over the dealer. In the second stage, you tackle the tens count strategy, which can give you as much as a ten percent advantage over the dealer during some portions of game play.

Designed for players already familiar with the popular casino card game, BLACKJACK TUTOR is based on the mathematical probabilities of blackjack. You can choose the number of decks to play with and the level at which the dealer reshuffles the cards. You can also play with or without insurance. As the dealer, the computer follows a set of casino rules. You have the options of staying, hitting, doubling, splitting, surrendering, and asking for insurance. When you play against the computer, you can request betting and playing strategy prompts at any time and you can specify whether you want message displays when you take an incorrect action. You can also study the computer playing a tens count strategy game of blackjack against the dealer, with instructive data displays. Revision 1.1 fixes bugs in doubling and splitting aces.

The author invites written questions and comments.

REVIEW COMMENTS
This is an enjoyable way to increase your blackjack skills. You can go at your own pace. The human engineering could be better.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10057
Diskette (810)	24K	$22.95	APX-20057

PLAYER PIANO
by Jerry White

Recommended for ages 4 and up/Written in BASIC

A twenty-note minipiano with music storage feature

Here's a program that turns your ATARI Home Computer into a twenty-note minipiano. Everyone can enjoy this versatile program, regardless of musical ability or training. PLAYER PIANO can also introduce young children to computer applications beyond game playing.

This automatically loaded program displays the 20 black and white piano keys, and a musical note symbol jumps across the keys as you play your tune. The computer keyboard keys corresponding to the piano keys display in the lower part of the screen. With PLAYER PIANO, you can create tunes much like tapping one out on a piano — you strike a key, the note plays, and then it's gone. Additionally, however, a series of menu options let you save your tune as you create it, modify it as desired (now or later), play all or part of it back at any time, and then store it on cassette or diskette, for recall at a later time. You can build tunes having as many as 400 notes, composed of whole, half, quarter, and eighth notes, and having a variety of tempos.

An auxiliary program lets you display on your TV screen or print a data listing of your longer, more complex songs for analysis and modification.

REVIEW COMMENTS
PLAYER PIANO makes clever use of the ATARI computer's graphics and sound features.

You can use this program at many different levels. Very young children can pick out tunes on the keyboard, and older users can compose lengthy tunes, save them, and modify them as desired.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10062
Diskette (810)	40K	$22.95	APX-20062

KEYBOARD ORGAN
by Alan Griesemer and Stephen Bradshaw

Recommended for ages 6 and up/Written in QS FORTH
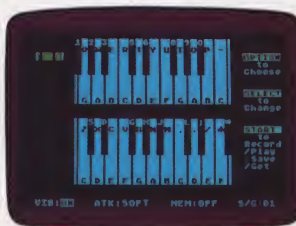
Simulate a simple organ with vibrato and attack

What does "Z Z B B N N B V V C C X X Z" mean to you? With KEYBOARD ORGAN, it's the beginning of "Twinkle, Twinkle Little Star"! You can turn your ATARI Home Computer into a simple organ with vibrato and attack features. You play songs using the computer's keyboard as if it were an organ keyboard, except that you can play only one note at a time. You can record and play back your songs, and even play duets or rounds by recording a song and playing it back while you play along on the computer keyboard.

Two rows of piano keys display on your TV screen. The keyboard symbol you press appears at the top of each piano key and the letter of the musical note appears at the bottom. When you press a key, the piano key changes color to show you what note you're playing.

You can modify the organ sound with the vibrato and attack options. For example, selecting vibrato ON with SOFT attack produces sounds like an organ, whereas setting vibrato OFF with SOFT attack produces sounds like a calliope. You can record a song and play it back as many times as you like. You can also record a song, turn off the record option, compose other tunes, and then replay your recorded song.

The authors invite written questions and comments.

REVIEW COMMENTS
There's no delay in this program between a key press and a sound; it's a good simulation of an organ. The graphics are nicely done.

The ability to save songs on diskette or cassette is a nice feature.

The "play-along" feature is unique.

The user manual, which includes six songs, is VERY GOOD.

REQUIRES
No required accessories

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10094
Diskette (810)	24K	$22.95	APX-20094

Personal Interest & Development

MORSE CODE TUTOR
by Richard Watts/Macrotronics

Recommended for ages 7 and up/Written in BASIC and machine language

Tutorial and drills for recognizing Morse code

Here's a comprehensive and enjoyable program for learning to recognize Morse code. With MORSE CODE TUTOR, you can learn at your own pace. Once you become familiar with all the characters, you can choose from five different practice options.

Beginners will want to use the program's tutorial, which contains eleven 4-character lessons. In each lesson you can specify the character to be sent and then listen to the signal, or you can have the program send any of the lesson's characters at random. In the latter case, you then press the corresponding key on your keyboard. If you press an incorrect key, the program sends the code of the pressed key and then resends the original character, to help you learn the difference. You can also choose to have random characters sent from the current and all earlier lessons. As you become familiar with each code, you can increase the transmission speed, from 5 words per minute to as fast as 60 words per minute.

You then use the program's other practice activities. For example, you can specify the Morse character to be sent; the character displays in blue on your TV screen as it's sent and then changes to yellow, so you always know which character you're hearing. Or, you can have the program send random characters in groups of five or random words. For all these options, you can vary the speed according to your needs. Those preparing for the FCC code test for ham radio operation, can listen to randomly generated ham radio callsigns (e.g. KF8WMO); each callsign displays as it's transmitted.

The author invites written questions and comments.

REVIEW COMMENTS
Being able to vary the speed at almost any point in the program is very helpful. MORSE CODE TUTOR is a good teaching tool. It doesn't teach you how to send Morse code, only how to receive it.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10092
Diskette (810)	24K	$22.95	APX-20092

PERSONAL FITNESS PROGRAM*
by David Getreu

Recommended for ages 12 and up/Written in BASIC

Eight self-paced exercises

Have you been spending too many hours seated at your ATARI Home Computer? Are you developing hobbyist's spread? Do you wind easily when you chase after Rover to retrieve your cassettes or diskettes? Do your muscles strain when you lug your equipment to the users' group meeting? Don't despair. Without leaving your computer, you can recapture the pride and vigor that come with being in good physical condition by exercising for 15–30 minutes a day with animated model Pinky Stamina.

The eight exercises in the PERSONAL FITNESS PROGRAM may help improve your flexibility, strength, stamina, coordination, circulation, and general body tone. Taking into account age, sex, heart rate, and past exercise performance, the program tailors the exercises to each user. You can exercise when you want and at your own pace. The program contains daily and weekly progress charts.

CONSULT YOUR PHYSICIAN BEFORE USING THIS EXERCISE PROGRAM.

REVIEW COMMENTS
The idea of exercising along with a computerized companion is still novel. Computer addicts will probably enjoy this approach. Others might miss exercising with fellow human sufferers. Pinky Stamina is a boring companion after a few sessions.

The animated model and charts make good use of the ATARI Computer's graphics features.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
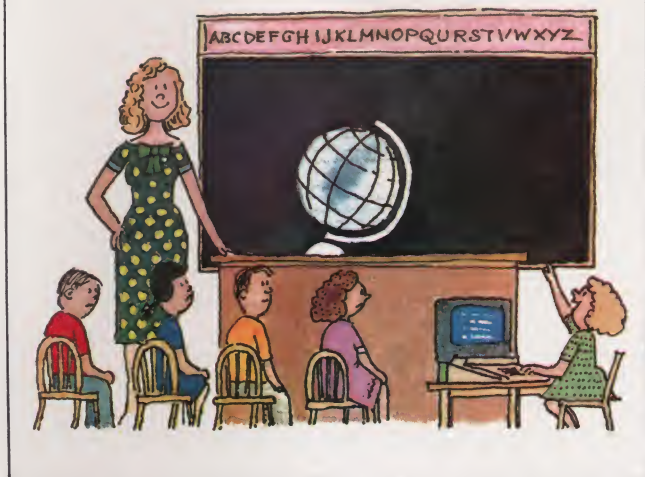One Paddle Controller
One Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20033

*PERSONAL FITNESS PROGRAM is a trademark of Atari, Inc.

Education

PRESIDENTS OF THE UNITED STATES
by Gary A. Dacus

Recommended for ages 10 and up/Written in BASIC

One-player quizzes on U.S. presidents

Which president can women thank for giving them the vote? Which president suffered through the Iranian hostage crisis? If you can't name these men, then you need PRESIDENTS OF THE UNITED STATES. This one-player quiz has two levels. On the novice level, you select a name from four choices; on the advanced level, you type in a president's first and last name. Both levels give you clues. Study the clues carefully, because you have only one chance per question. The program displays a running total of your correct answers as you play and your final total at the end of the 40 questions. The game remains a challenge because the clues change from game to game. Oh yes, in case you've forgotten, Warren Harding gave women the vote, and Jimmy Carter held office during the hostage crisis.

The author invites written questions and comments.

REVIEW COMMENTS
This straightforward quiz program is mostly text, using graphics only for the initial display screen. The programming routines used in the fill-in part let you use various forms of a president's name.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$15.95	APX-10068
Diskette (810)	32K	$15.95	APX-20068

FLAGS OF EUROPE
by Gary A. Dacus

Recommended for ages 8 and up/Written in BASIC and machine language

Two quizzes for identifying flags

FLAGS OF EUROPE is a colorful program that can help youngsters and adults alike quickly become experts at recognizing European flags. Users can select from two kinds of quizzes for identifying each illustrated flag. Novices can start out with the multiple choice quizzes. As they become more proficient, they can go on to the fill-in-the-blank quizzes. In both kinds of quizzes, the program helps out with clues in response to incorrect answers and then waits for another guess. Correct answers are rewarded with a few bars of the country's national anthem or of one of its native songs. FLAGS OF EUROPE remains a challenge after repeated use since the order in which the flags display varies from one session to the next, as does the selection of responses in the multiple choice quizzes. See how long it takes you to become a European flag wizard!

The author invites written questions and comments.

REVIEW COMMENTS
This is a colorful instructional tool that makes good use of the ATARI Home Computer's graphics and sound features. The limited number of flags might lessen the challenge after a while.

This program isn't suitable for black and white televisions.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20149

TYPO ATTACK
by David Buehler

Recommended for ages 8 and up/Written in machine language

NEW

1st Winter 1982

Type the right key and hit the Typos!

Do you remember the boring drills and practices you endured to increase your typing speed? Too bad TYPO ATTACK wasn't around then. But it's not too late to enjoy this fast-paced game for practicing locating keys on the keyboard and for improving your touch-typing speed and skill. TYPO ATTACK will appeal to beginning and professional typists alike (and will probably convert non-typists, as well).

Your goal is to defend eight bases against animated typo invaders falling directly overhead. Each base displays a keyboard character. To destroy a typo, you type the character directly below it in a base, which sends up an energy bolt. Pressing several keys at the same time won't help; you must type only one character for the bolt to fire. After the first few invasion waves, you have no time to search for the character on the keyboard. You must rely on your touch skill. And to add to the challenge, the characters in the bases change randomly. The better you become at fending off the typos, the faster they fall and the greater the selection of keys displayed in the bases. If you wipe out one set of invaders, you automatically face another of the game's eight kinds of typo invaders. Each time a typo lands, it digs nearer to the base. When a typo finally reaches a character in a base, the game ends.

TYPO ATTACK comes with nine skill levels, to accommodate all levels of typists. The higher levels contain more typos per invasion, more keys displayed in the character bases, and faster typo invaders. The program keeps track of the high score as well as your current score. This game can turn fledgling typists into champions, and they'll have great fun in the process!

The author invites written comments and questions.

REVIEW COMMENTS
What a great way to practice touch typing! This game is hard to put down. The cute creatures, varied songs, and quick action all add up to an engrossing game that will appeal to a wide variety of people.

The user manual is VERY GOOD.

REQUIRES
No required accessories

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	8K	$29.95	APX-10180
Diskette (810)	16K	$29.95	APX-20180

QUIZ MASTER
by Ingrid Langevin

Recommended for ages 8 and up/Written in BASIC

Create and use five kinds of computer-assisted quizzes

QUIZ MASTER is a classroom-tested, dual-purpose educational tool. Teachers and parents can use it to create five kinds of computer-assisted instruction (CAI) quizzes and students can use it to take the quizzes. Depending on the nature of the material, children as young as third graders can take QUIZ MASTER quizzes.

You can create vocabulary review (or spelling tests), true/false quizzes, and multiple choice quizzes with three, four, or five answers, and you can revise your quiz questions as needed. To create a quiz, you answer a series of questions. For example, to create a vocabulary review quiz, QUIZ MASTER asks you questions like "What is word #1" and "What is its definition?", to which you type in responses. When you're finished, QUIZ MASTER stores your quiz as a data file on either cassette or diskette. The new quiz is then immediately available for use. These quizzes use an encouraging approach. Incorrect answers elicit gentle responses like "OOPS!" Correct answers reward students with superlatives like "AMAZINGLY STUPENDOUS!" The final score displays at the end of a quiz.

The author invites written questions and comments.

REVIEW COMMENTS
This is a straightforward implementation of a quiz program suitable for personal or classroom use. The human engineering and program flow could be better. That QUIZ MASTER varies its responses for correct and incorrect answers makes the quizzes more interesting than usual.

The user manual is VERY GOOD.

REQUIRES
ATARI Basic Language Cartridge

OPTIONAL
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20081

ALGICALC*
by The Soft Warehouse

Recommended for ages 14 and up/Written in BASIC

Perform symbolic algebra and some calculus

Here's a valuable tool for students and teachers of algebra and calculus and for professionals who want a quick way to perform operations in symbolic algebra and calculus. ALGICALC is easy to use, and it has help screens you can display while using the program. To perform an operation, you type in an expression, and the program then expands it, factors it, or differentiates it, as you request. After the result displays, you can enter another expression. In addition, you can assign the results to variables for use in later expressions, letting you perform a sequence of related operations.

REVIEW COMMENTS
Once you learn the program's symbology, calculations are simple. Trigonometric functions would be a useful addition. The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10126
Diskette (410)	32K	$22.95	APX-20126

*ALGICALC is a trademark of The Soft Warehouse.

POLYCALC*
by The Soft Warehouse

Recommended for ages 14 and up/Written in BASIC

Perform symbolic algebra and calculus with polynomials

POLYCALC is a computational tool for performing symbolic algebra and calculus operations. It differs from ALGICALC in that POLYCALC supports polynomials that are generalized to permit fractional and negative powers of variables, and the program can use many unassigned variables, whereas ALGICALC can use only one. However, POLYCALC is essentially a polynomial system rather than a rational expression system. The program can help professionals as well as students and teachers of algebra and calculus with their computational activities, including integration.

REVIEW COMMENTS
This is a time-saving tool. Trigonometric functions would be a useful addition. The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10127
Diskette (810)	32K	$22.95	APX-20127

*POLYCALC is a trademark of The Soft Warehouse.

CALCULUS DEMON*
by The Soft Warehouse

Recommended for ages 16 and up/Written in BASIC

Derive symbolic partial derivatives and indefinite integrals of expressions

CALCULUS DEMON, the third program in a series that includes ALGICALC and POLYCALC, provides a comprehensive tool for automatically deriving symbolic partial derivatives and indefinite integrals of expressions. Individually, the programs offer a quick way to perform various kinds of operations in symbolic algebra and calculus. Collectively, they constitute a complete computational package.

CALCULUS DEMON is best at calculus, although it does contain some algebraic capabilities. It also offers some trigonometric, logarithmic, and exponential simplification. In contrast, ALGICALC and POLYCALC are better at algebra; they compute faster and more accurately and they permit use of larger algebraic examples.

The algebraic expressions CALCULUS DEMON can handle include trigonometric, inverse trigonometric, logarithmic, and exponential functions. In fact, only the amount of computer memory available limits an expression's complexity. The program also provides various automatic and optional mathematical transformations to simplify results or aid integration. Unlike most programming languages, which can evaluate an expression only if all variables have numeric values, CALCULUS DEMON can do true non-numeric operations.

Teachers and students of calculus will want this useful program to create problems, check solutions, and suggest or test hypotheses. Engineers and scientists can use it to check or to avoid tedious calculations.

REVIEW COMMENTS
CALCULUS DEMON can perform more advanced integration and differentiation than POLYCALC, but is slower than POLYCALC in doing algebra.

The user manual is GOOD for explaining the program's capabilities, but it doesn't explain the underlying mathematical concepts.

REQUIRES
ATARI BASIC Language Cartridge
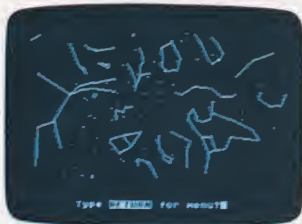
ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$22.95	APX-10155
Diskette (810)	40K	$22.95	APX-20155

*CALCULUS DEMON is a trademark of The Soft Warehouse.

Education

STARWARE
by Harry Koons and Art Prag

Recommended for ages 14 and up/Written in BASIC

Sky map generator and constellation quiz

City lights, cloudy skies, and pollution needn't prevent you from stargazing. With STARWARE you can explore the heavens by way of your ATARI Home Computer. STARWARE displays the stars on your TV screen with the brilliance normally seen only by astronomers at remote mountaintop observatories. Its 900 star coordinates accurately locate all the constellations in both hemispheres. You can display high-resolution diagrams of each constellation and high-res maps of the heavens visible from your home (or any other location) at any date and time this century, down to the second. Even the bright planets, sun, and moon are accurately located with respect to the stars. STARWARE takes about 4½ minutes to generate a complete high-res map.

The program prompts you for the necessary information, such as longitude, latitude, and time zone, to draw your requested map. You can look at a map in two ways — first with only the stars and then with the constellations outlined. STARWARE has beginner and advanced quizzes for testing your progress in learning to identify the program's 66 constellations.

The program also has handy features for telescope owners. It quickly calculates Local Sidereal Time (a time related to stars), letting you easily set the hour circle on your telescope. A "finder" option lets you specify the Right Ascension and Declination of the center of the map and the size of the field of view. This information is useful for locating objects in astronomy books and comets as they're discovered. Happy stargazing!

The authors invite written questions and comments.

REVIEW COMMENTS
With good program design and human engineering, STARWARE makes excellent use of the ATARI Computer's high-resolution graphics. Even novice astronomers will enjoy STARWARE.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20111

MAPWARE
by Harry Koons and Art Prag

Recommended for teenagers-adults/Written in BASIC
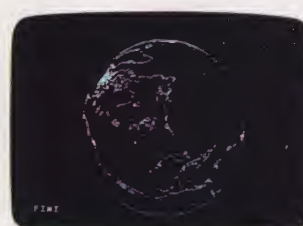
Create and store high-resolution world maps

With the MAPWARE programs you can create a wide variety of high-resolution world maps, store your maps, and display them whenever you like. MAPWARE contains nearly 9000 pairs of geographic coordinates for locating main land masses and islands on Earth. These maps are useful for such applications as games and simulations, tracking satellites, pointing amateur radio antennas, and teaching geography and cartography. The menu-driven programs create and display maps in four different projections: cylindrical (rectangular equal-spaced), orthographic equatorial, azimuthal equidistant, and general perspective (global). Try drawing a world map as you would see it from any distance above your hometown. The map creation program prompts you for the data needed, such as the longitudinal and latitudinal endpoints of your map.

MAPWARE comes on two diskettes — one containing the programs to display and create maps and one containing the coordinate data. You also need a blank formatted diskette on which to store data for the maps you create. MAPWARE comes with five sample maps.

The authors invite written questions and comments.

REVIEW COMMENTS
The maps look quite realistic; the amount of detail is impressive. The authors put a lot of work into MAPWARE.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

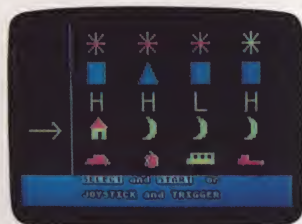| Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20055

I'M DIFFERENT!
by Kathleen and Philip Bergh

Recommended for ages 3–7/Written in PILOT and machine language

NEW

3rd Winter 1982

Colorful workbook-style exercises for preschoolers

Here's a first for APX—our first ATARI PILOT program. Designed by an experienced teacher and a professional programmer, it's one preschoolers are sure to enjoy. I'M DIFFERENT! introduces the concepts of "same" and "different" in an entertaining, noncompetitive game that doesn't keep score and has no time limit. Using a Joystick Controller, which can be held in a left-handed or right-handed position, a child guides an invisible turtle to the general area of the graphic design that differs from three others displayed on the screen. The turtle leaves a trail wherever he goes, and his path can indicate how well the child understands the concept. Older children can also trace over the designs or practice their letters. To check an answer, the child presses the joystick button. Correct responses cause flashing colors and a merry tune.

Five graphics choices—ranging from differences in color or shape only, to classifying objects—span five difficulty levels. I'M DIFFERENT! can help children learn hand-eye coordination, observation, classification, concentration, and other essential reading readiness skills. When discussions of the color, shape, size, and similarities and differences of the designs accompany game play, the skills gained by the child are even greater.

The authors invite written questions and comments.

REVIEW COMMENTS
Modeled after traditional workbook activity, this PILOT program adds color, graphics, and sound. Its feedback methods use color and sound instead of yes/no responses, making it ideal for young children. Teachers will welcome this extension to their regular computer-assisted instruction materials.

The user manual is EXCELLENT; it contains thorough explanations of the program's operation and design.

REQUIRES
ATARI PILOT (CXL4018)
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20183

MONKEY UP A TREE
by Joe Grande

Recommended for ages 4 and up/Written in BASIC

NEW

Solve problems so the monkey can reach the bananas

It's lunch time in the jungle and a little monkey has found a tree with lots of ripe bananas. The only way the monkey can climb the tree to reach the bananas is for you to solve arithmetic problems. It's up to you to help the monkey get its lunch today.

Here's what you do. Each time an addition, subtraction, multiplication, or division problem appears below the tree, you type the answer. If you're right, the monkey can climb part way up the tree. If you miss an answer or take too much time, the monkey slides down a bit, and the right answer displays so you can study it. The monkey is very hungry today and wants three bananas for lunch, but he can grab just one on each trip up the tree. Only you can help make a hungry monkey happy (and win the game)!

MONKEY UP A TREE can be enjoyed by one or two players of all ages, because each correct answer entered by a player causes the difficulty level of that player's subsequent problems to change. The difficulty is determined by the speed and accuracy of previous answers and is adjusted continually. This handicapping feature means all family members should try their best rather than adult players "going easy" on children and it means the game grows with a child's growing math ability.

The author invites written questions and comments.

REVIEW COMMENTS
Reaching the bananas is an appealing goal for children. The sliding monkey is an effective motivator. Sharing the keyboard may be a bit awkward at first for two young children. Very small children should have an adult available for guidance.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10165
Diskette (810)	24K	$22.95	APX-20165

COUNTER
by Al Casper

Recommended for ages 3-8/Written in BASIC and machine language

An introduction to numbers in four languages

Young children will happily learn to count to fifteen with this friendly introduction to numbers. Bright colors and happy sounds capture youngsters' attention and add to the fun of counting exercises in English, French, German, or Spanish.

COUNTER has two parts. First, a number of five-legged Gorks pop up on the screen. For each Gork, the Arabic numeral and the word for the number in the selected language scroll across the bottom of the screen and a chime counts the number of Gorks currently on the screen. In the second part, COUNTER displays a random number of objects, such as sailboats or barns, and waits for the child to count them. He or she can either use the space bar, Joystick Controller, or Paddle Controller to count each object, or press a number key to indicate the total number of objects. Each response changes the screen's background color, and after each correct answer, the screen turns green and a short melody plays. With one keystroke, parents can check on a child's progress.

All four versions of COUNTER have six levels of difficulty. As the levels increase, permitted response time decreases and the maximum number of objects displayed increases. COUNTER can also serve as an elementary vocabulary tutorial in any of the program's four languages.

The author invites written questions and comments.

REVIEW COMMENTS
COUNTER has all the color, sound, and action needed to captivate younger children. When ignored, the program slowly cycles through its repertoire, enticing a child to come play with it.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
A set of ATARI Paddle Controllers
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$29.95	APX-10148
Diskette (810)	24K	$29.95	APX-20148

THE MAGIC MELODY BOX
by W. Wes Horlacher

Recommended for ages 3 and up/Written in BASIC

Draw a melody line and hear it play

THE MAGIC MELODY BOX is a fast, easy, and fun way to introduce young and old to music composition. Creating a four-voice, harmonized song involves only two simple steps. You use a Joystick Controller first to select one of twelve rhythm patterns and then to draw a melody line in the magic box. As you draw, the notes play, and you can back up and redraw your melody at any time. Here's your chance to test whether "crazy" patterns create inspired compositions. Then the program uses your melody line and rhythm selection to compose about a minute of harmonized music in a popular song format. When the song ends, you can play it again or compose a new song.

This music program is different. It doesn't use traditional musical notations, such as measures, notes, and clefs. Instead, it relies on simpler, abstract concepts like graphics, balance, and themes, used by many professional composers and arrangers. The program doesn't teach how to read or play music; rather, it teaches how to create music. You'll delight in how good your creations sound and in how quickly and easily your melody composition skills develop with THE MAGIC MELODY BOX.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
Don't confuse this program with any other music program on the market. Involved mathematics establish intriguing algorithms for creating the accompanying harmony and for extending a "bridge-like" transformation in the middle. The result is a complete song!

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10182
Diskette (810)	24K	$15.95	APX-20182

SPELLING GENIE
by Dale Disharoon

Recommended for ages 5-14/Written in BASIC

Four one-player spelling games using preset lists or your own

SPELLING GENIE has so much magic and whimsy that children will want to play its four spelling games time and time again. And teachers and parents will welcome the program's versatility. Along with nine predefined spelling lists, SPELLING GENIE accommodates any spelling list children need to practice. In fact, kids lucky enough to have SPELLING GENIE will probably clamor for more words to master!

SPELLING GENIE features four very different approaches to mastering spelling skills. In Pop On, a word flashes briefly and the child then types in the same word. In Mix Up, all the letters of a word display in random order and the child types in the unscrambled word. In Vowels, a word displays with blanks in place of vowels, and the child types in the complete word. In Word Whizzer, ten words display in a column and a spinner displays opposite one of the words; the child activates the "whizzer" by typing the word opposite the spinner. SPELLING GENIE also has a tournament option for playing all four games consecutively. In each exercise, players can't go on to another word until typing the current one correctly, but the program helps out in various ways to avoid discouragement.

A child playing the games alone works against a countdown clock to spell as many words as possible correctly. Two children playing the games compete against each other for the winning score. All the games are playable using either the computer keyboard or a Joystick Controller, or a combination. Children can also print their spelling lists for further study.

The author invites comments and questions by telephone.

REVIEW COMMENTS
The four different games offer good reinforcement of word recognition and spelling skills.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller per player
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10145
Diskette (810)	24K	$22.95	APX-20145

WORD SEARCH GENERATOR
by Max Mulliner

Recommended for ages 6 and up/Written in BASIC
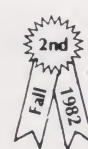
Create and play word
search puzzles

Teachers, students, and word lovers will all enjoy this combination teacher's aid and game. Teachers can use it to create spelling and word exercises that students won't even recognize as learning! WORD SEARCH GENERATOR has two sample word lists, or you can create your own to tailor a one- or two-player game to a specific list of up to thirty words. No matter what its use, this program provides hours of challenging entertainment.

In the game, your objective is to locate words hidden in a grid of letters. Words can be hidden horizontally, vertically, or diagonally, and backwards or forwards within the grid. You use your joystick to locate the first and last letters of a word before time runs out. In the two-player game, you take turns searching for words. The final scores display when all the words have been found.

For each round, you can change the word list, the size of the grid, and the time limit. You can also use the program's print option to create copies of word search grids and their solution keys for study or game preparation.

The author invites comments by telephone and mail.

REVIEW COMMENTS
This program's many options make it a very useful educational tool. Color combinations and joystick movement could be better.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One Joystick Controller per player

OPTIONAL
ATARI 825 80-Column Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20140

Education

LETTERMAN
by Ed Stewart and Ray Lyons

Recommended for ages 8 and up/Written in BASIC

A non-violent hangman for 1-2 players

Has it ever bothered you that a game as fun as hangman has a violent underlying premise? Well, here's a variation on the traditional paper and pencil, word-guessing game that replaces a dismal outcome with lively animation, colorful graphics, and amusing sound effects. The only object in danger is the apple on Letterman's head! You have six turns in which to guess the secret word, one letter at a time. Either the program or another player can choose the word. LETTERMAN contains nearly 400 words within three selectable difficulty levels. And when you've exhausted this list you can continue to enjoy LETTERMAN because the user manual contains easy-to-follow instructions for adding to (if your system has more than 16K of RAM) or revising LETTERMAN's list of words.

Owing to different computer memory requirements, the cassette and the diskette versions differ slightly. Both versions work as described above. However, the diskette version offers some added features. You can request hints if you get stuck. You can also choose to play under a time limitation for making each guess. And the program can keep track of as many as nine players' turns and scores.

The authors invite comments by mail and telephone.

REVIEW COMMENTS
The graphics features and lively, friendly approach used in every aspect of LETTERMAN make this program especially appealing.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10096
Diskette (810)	32K	$22.95	APX-20096

WORDMAKER
by Dale Disharoon

Recommended for ages 6 and up/Written in BASIC

A vocabulary and spelling game for 1-2 players

How about a little friendly and educational spelling competition? WORDMAKER is a game for people of all ages who enjoy words and reading. It's a terrific practice tool for students. The more you play, the better you get.

One or two players use Joystick Controllers to make three- or four-letter words. In a two-player game, you select a time limit between one and five minutes and you're off! A digital timer ticks off seconds as you race to fill your side of the screen with more words than your opponent. You get five points for each correctly spelled word. You lose five for each misspelling. Don't try to copy from your opponent's word list! WORDMAKER knows who spelled the word first and gives that player credit. A 30-second warning freezes the joystick for a few seconds so you can examine your progress and plan your final strategy.

At the end of a game, the winner's name displays. You may now choose either to reuse all the words in your next game, or to delete those words. If you delete the previously spelled words, the games becomes much harder. You must think of different words and the competition mounts.

In the one-player version, you race against the clock and try to surpass your previous scores. WORDMAKER's printout option lets you study your words after the game. How about writing a story with your new vocabulary list?

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
The printout option is an outstanding educational feature. Printed lists can be used as creative writing assignments. The human engineering of WORDMAKER is well done. The joystick is used effectively. Error checking and the word search are fast.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One or two ATARI Joystick Controllers

PAL

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$22.95	APX-10099
Diskette (810)	40K	$22.95	APX-20099

CUBBYHOLES
by Dale Disharoon

Recommended for ages 5-12/Written in BASIC

An addition game for 1-2 players

If you're looking for a fresh approach to teaching addition, your search is over. Youngsters will line up to play CUBBYHOLES! This one- or two-player game gives plenty of addition practice, but players will be so absorbed in wielding their Joystick Controllers and planning their strategy, they'll hardly be aware they're sharpening their addition skills.

In the two-player version, you each work on separate, but identical 3-by-3 grids of one-digit numbers. Below the grid a number between 6 and 18 displays. You can either select this number yourself or you can opt for CUBBYHOLES to choose it for you. You use a joystick to draw boxes around sets of numbers such that each set adds up to the number displayed below the grid. You must use all the numbers in the grid, and you may enclose each number in only one box. Each grid has only one solution! Once you think you've solved the puzzle, move to the middle of the grid and press the joystick's trigger button. If you're wrong, CUBBYHOLES tells you to try again. If you're right, you score a point and another round begins. You can play as few as two rounds or as many as twenty. In the one-player version, one grid displays and your goal is to complete every round successfully. CUBBYHOLES has more than five hundred puzzle combinations, so line up the kids for fun and competition with an educational twist.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
CUBBYHOLES is a charming approach to teaching simple arithmetic. The graphics, sound, and ingenuity add a new dimension to drill and practice programs.

CUBBYHOLES is a teacher's dream for increasing students' concentration, analytical abilities, and math skills — all at the same time. It's a great two-player game, but it's rather weak as a one-player game.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10101
Diskette (810)	24K	$22.95	APX-20101

NUMBER BLAST
by Richard Wiitala

Recommended for ages 6–16/Written in Basic

A multiplication and addition game for 1-2 players

Who doesn't like color, sound, and action to perk up tedious memory drills? Here's a one- or two-player number drill combining quick thinking with quick reflexes. In the two-player version of NUMBER BLAST, you practice your multiplication and addition while working your joystick to "blast" to the correct number more quickly than your opponent. But be careful — incorrect answers cost you points. Depending on the kind of number drill chosen, either the first to score 200 points or the player with the higher score at the end of a set number of problems is the winner. In the one-player version, you can practice your joystick techniques and response speed while blasting your way through the drills. You can select a slow, medium, or fast joystick speed.

NUMBER BLAST offers practice in random addition problems with numbers ranging from 1 to 20; addition tables from 1 to 9 with one number picked at random; and integer addition problems with numbers ranging from −20 to 20. It also offers random multiplication problems with numbers ranging from 1 to 12; multiplication tables from 1 to 9 with one number picked at random; and integer multiplication problems with numbers ranging from −12 to 12.

The author invites written questions and comments.

REVIEW COMMENTS
The joystick aspect of NUMBER BLAST, which is quickly mastered, makes this number drill fun for youngsters. The program also uses color and sound to enliven the drills.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
A set of ATARI Joystick Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10097
Diskette (810)	24K	$15.95	APX-20097

VIDEO MATH FLASHCARDS
by Richard S. Waller

Recommended for ages 6–10/Written in BASIC

Two-minute, one-player math drills

VIDEO MATH FLASHCARDS run through two-minute drills in such a pleasant way that youngsters might even do them for recreation! These drills resemble the familiar single-digit problem/answer flashcards, but this version enlivens the drills with some simple sound, color, and graphics features. It also displays a two-minute counter in the corner of the screen so the child can keep track of the time. The goal is to answer correctly as many problems as possible within the two minutes. A child can choose addition, subtraction, multiplication, or division problems or a mixture of all four types. He or she need enter only the answer, without having to press the RE-TURN key each time. The program displays the number of right and wrong answers as the drill progresses. The child receives a rank, such as NOVICE or MATH WIZ, at the end of the drill according to the number attempted and the number answered correctly. The program also contains a review stage, during which it redisplays any problems missed during the drill to give the child another chance to answer correctly. If he or she misses the answer, the correct answer displays as a suggestion to the child to type in and that problem occurs again later in the review. These drills are suitable for individual and group practice (children taking turns or in teams).

The author invites written questions and comments.

REVIEW COMMENTS
These drills are elementary, but they're well done. You can't set the level within the 0–9 range of problems/answers. The approach is friendly and encouraging, rather than punitive. We especially enjoyed the review cycle. The sounds and graphics are fairly basic.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge | PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	8K	$15.95	APX-10048
Diskette (810)	16K	$15.95	APX-20048

MATHEMATIC-TAC-TOE
by Nadav Caine

Recommended for ages 8-16/Written in BASIC

Two-player arithmetic drills

Simple computation errors you make at age eight can stay with you all your life. Don't let your child start out with these mistakes. Here's an offbeat way for kids to practice their basic computational skills. Suitable for classroom or home use, MATHEMATIC-TAC-TOE provides addition, subtraction, multiplication, and division drills on 15 difficulty levels and 15 time-limit levels, making this program appealing to children with widely varying skill levels. The most difficult levels go beyond the point at which students normally memorize answers. The time limit ranges from 2 to 23 seconds.

After choosing the kind of math problem to practice, a difficulty level, and a time-limit level, the two players are ready to square off against each other on the standard three-by-three square, tic-tac-toe grid. A player chooses a square to fill. The computer then poses a math problem, which the player must answer within the designated time limit in order to mark his or her chosen square. The computer marks the square with the player's symbol (X or O) for a correct answer. The player forfeits the square for an incorrect answer. The game ends when one player fills a row vertically, horizontally, or diagonally, or when the players fill all nine squares but neither has completed a row (a tie). Kids will delight in testing their skills against parents', but parents will happily acknowledge defeat in this case.

The author invites questions and comments by telephone and mail.

REVIEW COMMENTS
The graphics could be more interesting.

The user manual is VERY GOOD.

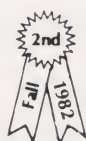### REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10082
Diskette (810)	24K	$15.95	APX-20082

MATH*UFO
by Gregor Novak

Recommended for ages 8-12/Written in BASIC and machine language

An arcade-style arithmetic
game for 1-2 players

A mysterious flashing spaceship floats to the top of the screen. Is it a Martian? No, it's MATH*UFO flashing you number drills! MATH*UFO is a very competitive, one- or two-player educational game that turns math drills into a fast moving, arcade-style challenge. So, warm up your joystick wrist and get ready for a space chase!

As a spaceship containing a math problem floats up the center of the screen, the answer appears within each player's column of numbers along the side. Players use their joysticks to place their guns on the answer and then fire at the UFO as it passes by. A hit from the correct answer earns points. The high scorer after a set time wins the game. In the one-player version, a player races against the clock to improve his score and math skills.

To accommodate different levels of coordination and mathematical proficiency, MATH*UFO has options for varying the speed of the UFO and the gun movement and for selecting from the addition, multiplication, subtraction, or division problems. You may choose any number between one and nine or all numbers in that range.

The author invites comments by telephone and mail.

REVIEW COMMENTS
MATH*UFO is an extremely entertaining way to learn basic number facts.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10151
Diskette (810)	32K	$22.95	APX-20151

HICKORY DICKORY
by Dale Disharoon

Recommended for ages 5-11/Written in BASIC

Teaches traditional and
digital clock reading

Do you know children who, given the choice between reading the time on a traditional clock in the same room and a digital one in another room, will opt for the extra footwork to read the digital time? Many children today grow up with only digital clocks around the house. When they're faced with a traditional clock with hands, they're often stumped. HICKORY DICKORY can help children master the translation process between these two ways of telling time. Teachers in grades kindergarten through sixth have used HICKORY DICKORY to help students learn to tell time. The program displays time using hour and minute hands on a traditional face clock in high resolution graphics. Using either the computer console's keyboard or a Joystick Controller, the child gives the digital equivalent. HICKORY DICKORY offers six skill levels: exact hours, half hours, 15-minute intervals, 10-minute intervals, 5-minute intervals, and all possible minutes. The child selects the number of examples to try. When he or she answers correctly on the first try, the program notifies the child and goes on to the next example. When he misses on the first try, the program displays a clue and asks him to try again. It moves on to a new example only after the child answers the current one correctly. A running score displays after each example and the total score displays at the end of the session.

The author invites questions and comments by telephone and mail.

REVIEW COMMENTS
This is a good program for teaching children to convert "clock time" to digital time. It uses the joystick well.

Distinguishing between two adjacent minutes on the clock face is sometimes difficult.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10071
Diskette (810)	24K	$15.95	APX-20071

MUSICAL COMPUTER-THE MUSIC TUTOR
by Computer Applications Tomorrow

Recommended for ages 6 and up/Written in BASIC

An overview of the mechanics of music

MUSICAL COMPUTER-THE MUSIC TUTOR will appeal to the untapped musician in all of us. Good graphics and a catchy tune make this program an excellent educational tool for all ages. Even young children can understand the program's simple explanations.

MUSICAL COMPUTER gives you a solid overview of the mechanics of music. You quickly learn about musical symbols, treble and bass clefs, rhythm, and sharps and flats. You also learn the names of every musical note through simple phrases. For example, "face" stands for some of the notes in the treble clef. You see how musicians read music by counting notes — whole notes, half notes, quarter notes, eighth notes — and the rests that occur in between. You even have time built-in to practice, practice, practice!

The program is divided into two parts. Within each part, you choose your activity from a menu. In part one, you learn about note reading, rhythm, and treble and bass clefs. In part two, you learn about notes and rests, dynamic and tempo markings, sharps and flats, and signs and symbols.

This program is both versatile and easy to use. For example, you can pause at any time to study a particular screen's information. You can also return to the menu at any time. In addition, all your responses consist of single keystrokes. Once you complete this program, you're on the road to an exciting new interest with unlimited horizons.

The author invites written questions and comments.

REVIEW COMMENTS
MUSICAL COMPUTER is a comprehensive look at musical concepts and notation. However, it's not very interactive, and you can't create or play music with it.

Familiarity with music is helpful, but not necessary. The treatments of rhythm and volume markings are particularly well done.

The user manual is GOOD.

REQUIRES
ATARI Basic Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$15.95	APX-20098

FROGMASTER
by Michael Crick

Recommended for ages 9 and up/Written in BASIC and machine language

A fast-moving game based on behavior modification

Here's a different and fascinating concept in computer instruction. On the surface, FROGMASTER is a fast-moving, high-concentration, competitive game for one to four players. Underneath, however, it's a dynamic exercise in learning how to use conditioning to train animals. Inside each frog or tadpole on the screen is a primitive brain — entirely simulated by the computer.

After FROGMASTER automatically loads into computer memory, the players position themselves on the "football pond." The object is to train your tadpoles to cross your opponent's goal line; the first to score 50 points wins. Left to themselves, the tadpoles dart around randomly. But when you reward them by pressing the joystick button, they learn to jump in the right direction. When rewarded, the tadpole will glow with pleasure, squeak with delight, and jump again in the same direction. Rewarding also modifies the dozen primitive brain cells controlling each tadpole's behavior. Your aim is to condition these brain cells to turn inept tadpoles into dedicated scorers. After playing some games, you can increase the challenge by adding walls to be penetrated and metamorphosis — where tadpoles turn into frogs that lay eggs and eat opposing players!

REVIEW COMMENTS
This is a good educational simulation as well as an enjoyable game. The metamorphosis option is particularly well done. To appreciate the game fully, read the manual, which provides an EXCELLENT explanation of both the game and the theory behind the program.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20131

STEREO 3-D GRAPHICS PACKAGE
by Clyde Spencer

Recommended for teenagers and up/Written in BASIC

Produce wire-frame stereograms

STEREO 3-D GRAPHICS PACKAGE can introduce you to the world of real 3-D. These programs generate stereograms that let you learn to see a wire-frame stereo model in true three dimensions. Using a simplified approach to the conventional Cartesian coordinate system, you build your model around the center of the "universe" — your TV screen. You then imagine you're in a balloon or aircraft looking down toward the ground and are free to move anywhere you want in the universe. You define your viewing position with the appropriate X, Y, and Z coordinates and the program automatically calculates the parameters to place the center of the universe in the center of your TV screen. You can view objects from anywhere — above, below, behind, and even inside. You can vary the field of view from 2 to 179 degrees, similar to the range from telephoto to normal to wide-angle viewing.

Most of the stereogram drawing is in the ATARI Computer's high-resolution graphics mode. However, the program also draws a red and green stereopair in medium-resolution graphics mode so users not owning a stereoscope and not being able to direct stereoview can use inexpensive anaglyphic (red and green) glasses to learn direct on-screen stereoviewing.

REVIEW COMMENTS
This is a good but complex tool for working with stereo stick figures and photographic techniques. You'll need to read the user manual carefully and experiment a while. It's good for learning coordinate geometry. Not everyone can see 3-D with the glasses, while people good at seeing stereo can see it without them. You have to make the glasses yourself. Instructions are provided.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI Paddle Controllers
Pocket (folding) stereoscope
Polaroid camera
Anaglyphic glasses (red and green lenses)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20087

ATLAS OF CANADA

Recommended for ages 10 and up/Written in BASIC

Learn the provinces, capitals, and landmarks of Canada

What is the capital of Nova Scotia? Is the largest Canadian city also Canada's capital? How many provinces does Canada have? ATLAS OF CANADA can give you the answers. The program first draws an outline of Canada and then outlines a province or landmark in white and asks you to name it (and its capital, if it outlines a province). As a clue, the number of letters in the names display. Should you guess wrong (spelling counts!), the correct answer displays. The outline then changes to blue and the program outlines another province or landmark.

The program keeps score of your correct guesses and displays your final scores. It presents the provinces, capitals, and landmarks in a different order each time you begin a session, so memorizing an order won't help!

How did you do with the questions at the beginning? The capital of Nova Scotia is Halifax. The largest city in Canada is Montreal, but Canada's capital is Ottawa. Canada has ten provinces.

REVIEW COMMENTS
This is the Canadian version of ATARI States & Capitals.

The map is rather small.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10093
Diskette (810)	32K	$22.95	APX-20093

Education

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EASYGRADER, REV. 1.1*
by Dan Hale of A. D. Enterprises

Recommended for teachers & school administrators/Written in BASIC

Organize, analyze, and print class records

Whether you teach one course a year or five courses a day, EASYGRADER helps reduce the effort needed to organize and produce class records. You can store student grades, compute averages, assign final grades, produce statistics, and print reports with this comprehensive package.

EASYGRADER's menus and prompts guide you through the information you provide the program. To use available computer memory most efficiently, you indicate the number of characters you wish to allocate for class size, number of assignments, and lengths of student and assignment names. You can specify your own grading standard, and the program supports both curve and standard percentage grading. EASYGRADER assigns letter grades with pluses and minuses, allowing you to adapt previously established grading methods to the program. You can produce reports for students with low grades, using any desired average as the cutoff.

EASYGRADER accommodates both students who've been excused from some assignments and those who enter a course during the term. An optional sorting feature will reorder a class list alphabetically by name to accommodate added students. You can also print two kinds of final grade reports, as well as reports of class average statistics for any assignment and a frequency plot for final grades. EASYGRADER makes the most of your ATARI Computer's time-saving capabilities while letting you retain your traditional grading system. Revision 1.1 uses more color, has a new menu, and contains design changes that make it easier to use.

The author invites written questions and comments.

REVIEW COMMENTS
EASYGRADER is an extensive record-keeping package requiring some practice to appreciate fully.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing data

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20152

THREE R MATH SYSTEM
by Dan Rohr

Recommended for ages 5–13 for math drill in the classroom and at home/Written in BASIC

Create and use customized math drills

Whether faced with a large class or a small one, what teacher wouldn't dream of having an ultrafast way to create custom-tailored math drills for each student? THREE R MATH SYSTEM can do just that. This comprehensive basic math drill package uses a unique password system by which teachers specify the types and levels of problems for each student, as well as the amount of time allowed per problem, the number of problems to be worked, and the total time allowed for the session.

THREE R MATH has 101 difficulty levels covering addition, subtraction, multiplication, and division. Problems range from adding two one-digit numbers to multiplying a three-digit number by a four-digit number. The sequentially designed levels let each student work on problems at his or her current ability level.

Designed for kindergarten through eighth grade levels, the system is very easy to use for both students and teachers. The teacher creates a six- or seven-letter password, one letter representing each selectable drill feature, and gives it to the student. The student inserts a diskette into the disk drive, types in his name and the password, and the drill begins. A summary of the results displays at the end of the session. The results can also be stored on diskette or printed out so that the student has a permanent record of the session. The printout contains all the problems worked, together with the correct answers and the student's answers, helping to pinpoint weak spots. Ten extra problems also appear for more practice. The program produces summary reports of all students' results.

REVIEW COMMENTS
Teachers can use this package and never touch the computer. The reports are a great diagnostic tool and can be used for grading. This package is useful for school computer systems, classroom teachers, and the home.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing records

OPTIONAL
ATARI 825 80-Column Printer or Epson MX-80 Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20133

PROGRAMS BY THE MINNESOTA EDUCATIONAL COMPUTING CONSORTIUM

The Minnesota Educational Computing Consortium (MECC) assists users and educational member systems in coordinating and using computer resources through cooperative planning. It also provides current computing methods and materials. APX now carries these MECC programs:

Instructional Computing Demonstration (APX-20137)
Music I: Terms & Notations (APX-20139)
Music II: Rhythm & Pitch (APX-20172)
Music III: Scales & Chords (APX-20161)
Elementary Biology (APX-20136)
Earth Science (APX-20160)
Geography (APX-20164)
Metric & Problem Solving (APX-20138)
Prefixes (APX-20163)
The Market Place (APX-20162)

All MECC programs come with extensive documentation prepared by MECC, including many suggestions and materials for both background and follow-up activities.

The following requirements and order information apply to each MECC program available through APX.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$29.95	see above

> **Please note**. MECC programs are usable only with ATARI 810 Disk Drives having a data separator circuit. Drives with a blue "DS" sticker on the disk drive carton have this circuit.
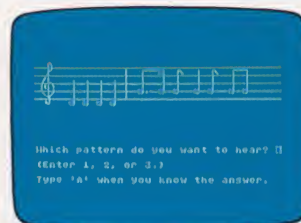

INSTRUCTIONAL COMPUTING DEMONSTRATION (APX-20137)
Minnesota Educational Computing Consortium
Recommended for teachers/Written in BASIC

Demonstrations of learning techniques in MECC programs

These demonstration programs highlight some techniques used in MECC programs, such as drill and practice, simulation, educational games, problem solving, and demonstration tools. RHYTHM, a music drill, shows how the computer can provide visual and auditory stimuli as well as instant feedback to a student's responses. BASE TEN, a mathematics drill, demonstrates the use of graphics and a game-like format to reinforce multiplication skills. EARTHQUAKES, a science simulation, and WORDS, a one- or two-player game in the format of the game known as Concentration, illustrate programs in which students devise group strategies through discussion or compete against another group. SLOPE demonstrates the concepts of slope and intercept. LEMONADE is a social studies simulation demonstrating the computer's ability to generate random events requiring students to make decisions.
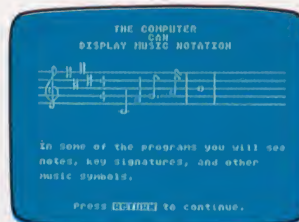
OPTIONAL
One ATARI Joystick Controller

MUSIC I — TERMS AND NOTATIONS (APX-20139)
Minnesota Educational Computing Consortium
*Recommended for grades 5–10/Written in BASIC*

Drills for identifying notes, keys, and terms

This set of programs is the first of three diskettes focusing on music theory drill and practice. The three diskettes can be used singly or in combination to drill students at nine levels of difficulty. Students choose the level of difficulty of the problems, and they can select exercises of increasing difficulty as they improve. The computer keeps track of the problems answered correctly and selects subsequent problems from ones the student hasn't tried or has answered incorrectly. NOTE TYPES is a drill for recognizing different types of notes and rests. NAME THE NOTE is a drill for identifying notes on both treble and bass clefs. KEY SIGNATURES is a drill for recognizing major and minor keys. TERMS is a drill for identifying 57 musical terms. ENHARMONICS is a drill for identifying notes that are equivalent in pitch but that can be written differently.

Education

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MUSIC II — RHYTHM & PITCH (APX-20172)
Minnesota Educational Computing Consortium
Recommended for grades 5–10/Written in BASIC


NEW
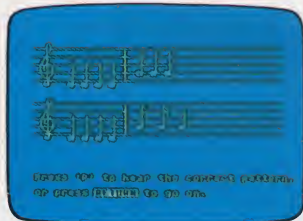
**Six drills and practices
in rhythm and pitch**

This is the second in a series of diskettes for music theory drill and practice. COUNTING provides drill on time signatures, note and rest type, and counting. In AURAL INTERVALS and VISUAL INTERVALS, students practice recognizing intervals by ear and by sight. WRONG NOTE provides practice in comparing written and performed pitch patterns. The computer displays and then plays a pattern of five notes. When played, one of the notes is either a whole or a half step off. The student identifies the wrong note. MISSING NOTE provides drill in elementary melodic dictation. The computer displays a pattern of four notes and a space; the program plays the pattern and the student identifies the missing note. RHYTHM provides drill in comparing written and performed rhythm patterns. The student decides which of three patterns heard matches the one displayed. RHYTHM PLAY provides drill in performing rhythm patterns.

MUSIC III — SCALES & CHORDS (APX-20161)
Minnesota Educational Computing Consortium
Recommended for grades 3–10/Written in BASIC

NEW
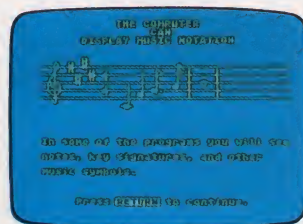
**Five practices for
recognizing musical tones**

This is the third in a series of diskettes for music theory drill and practice. The five programs on this diskette provide aural practice in recognizing various musical tones. In WHOLE-HALF, the computer plays two pitches and asks the student to determine whether the interval between them is a whole step or a half step. In FIND THE HALF, the computer plays a series of pitches that are part of a scale and asks the student to select between which two pitches a half-step interval occurred. In TRIADS, the student practices identifying arpeggiated major, minor, augmented, and diminished triads. In SCALES, the student practices identifying major scales, three minor scales (harmonic, natural, and melodic), and four modes (dorian, phrygian, lydian, and mixolydian). In SEVENTHS the student practices identifying major, minor, dominant, half diminished, and full diminished seventh chords.

ELEMENTARY BIOLOGY (APX-20136)
Minnesota Educational Computing Consortium
Recommended for upper elementary-junior high school levels/Written in BASIC

**A circulatory tutorial and
two ecology simulations**

This diskette contains three introductory biology programs. CIRCULATION is a tutorial on the circulatory system of a fish, which has a two-chambered heart. The program uses color graphics to show movement of a blood cell throughout the circulatory system. ODELL LAKE and ODELL WOODS are simulations focusing on the ecological concepts of food chains and food webs. In ODELL LAKE, individuals, small groups, or the entire class role play fish in a lake by selecting appropriate actions to survive random encounters with other fish and organisms. In ODELL WOODS, students role play an animal found in the northern United States, learning the decisions necessary for survival.

EARTH SCIENCE (APX-20160)
Minnesota Educational Computing Consortium
Recommended for grades 5–12/Written in BASIC

NEW

**Lessons on earthquakes,
minerals, and the solar system**

The EARTH SCIENCE diskette contains five programs. EARTHQUAKES is a three-part program comprising a general explanation on earthquakes, a lesson on using seismographic information to locate the epicenter of an earthquake, and a problem combining the concepts of primary waves, secondary waves, and lag time. MINERALS is a mineral identification key for isolating distinguishing characteristics for 29 minerals commonly studied in earth science. SOLAR DISTANCE helps students develop an understanding of distance in space, by having them make trips from earth to planets by a variety of vehicles, such as train or bicycle. URSA LESSON identifies and displays the star patterns in the five major constellations in the northern hemisphere, and URSA ROTATION simulates the patterns and rotations of the constellations according to the day of the year and the time a student selects.

OPTIONAL
One ATARI Joystick Controller

GEOGRAPHY (APX-20164)
Minnesota Educational Computing Consortium

Recommended for grades 4–10/Written in BASIC

NEW

Identify capitals, states, countries, and continents

The GEOGRAPHY diskette contains four programs for practicing identifying names and locations of cities, states, countries, and continents. Students select a geographical area and the number of problems. The program then displays problems at random and gives a student two chances to answer correctly. STATES gives students practice in identifying states by geographic region, location, and shape. CAPITALS gives practice in identifying the names and spellings of states and capitals within the continental United States, Alaska, and Hawaii. A student can have states displayed and name the capital, have capitals displayed and name the states, or opt for a combination of problems. In CONTINENTS, a student identifies the continent on which a country, whose name is displayed, is located. In COUNTRIES, a student names the capital of the country whose name is displayed. Both CONTINENTS and COUNTRIES contain the names of 86 countries.

METRIC AND PROBLEM SOLVING (APX-20138)
Minnesota Educational Computing Consortium

Recommended for grades 2–6/Written in BASIC

Practice using the metric system and problem solving techniques

This set of seven programs contains three drills and practices and four games for learning about the metric system and problem solving techniques. In METRIC ESTIMATE, students estimate line segments in centimeters and millimeters. In METRIC LENGTH, students convert from one metric unit to another. In METRIC 21, students play a game of metric blackjack with the computer. BAGELS is a game of logic in which a student uses clues to guess a two- to four-digit number selected randomly by the computer. HURKLE is a game for learning to locate points on a number line or for teaching the coordinate system. NUMBER is a game of logic in which the computer chooses a number and gives clues. TAXMAN is a game for teaching factors and prime numbers.

Education

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PREFIXES (APX-20163)
Minnesota Educational Computing Consortium

Recommended for grades 3–6/Written in BASIC

NEW

Drills and games for learning prefixes

PREFIXES contains seven programs focusing on one aspect of reading development. These combination tutorials and drills highlight "un," "re," "dis," "pre," and "in," which are among the most commonly used prefixes and are most in need of being taught. The five lessons are divided into two parts. The first part defines the concept of a prefix and the meaning of the prefix being studied, and then presents examples to clarify the meaning, with graphics to reinforce the meaning pictorially as well as verbally. The second part is an exercise reinforcing the concepts just presented, for example, completing sentences with the appropriate word, either the root word or the root word plus prefix. In addition, two games encourage students to review the material in order to attain a goal. In all the lessons, the program selects questions randomly from a bank of questions so that repeat practices won't result in the same sequence of problems being presented.

THE MARKET PLACE (APX-20162)
Minnesota Educational Computing Consortium

Recommended for grades 3–8/Written in BASIC

Learn basic economic concepts by managing businesses

THE MARKET PLACE contains four simulations for teaching basic economic concepts. The programs range from finding the optimal price based on sales, to setting production levels, advertising budget, and selling price to maximize income. The programs display financial reports of varying complexity. In SELL APPLES, students find the best price based on the number of apples sold. Because the program sets a new best price each time, students can run the program repeatedly. In SELL PLANTS, students set a selling price at the beginning and are told their fixed costs. They then vary their advertising for five days to determine the best price and discover the most profitable level of advertising. In SELL LEMONADE, which can be spread over several sessions, as many as six lemonade stand owners vary their production and advertising costs for fifteen days to maximize profits. In SELL BICYCLES, the most complex simulation, students learn how pricing, advertising, and production levels affect supply and demand by managing two bicycle companies. The first to attain $36,000 in assets wins.

Entertainment

JUKEBOX #1
by Lee Actor

Recommended for ages 6 and up/Written in BASIC and machine language

Eight classical music selections

Do you need a new approach to home entertainment? How about some elegant music as background for your next dinner party? Created with the help of ADVANCED MUSICSYSTEM (APX-20100), JUKEBOX #1 turns your ATARI Home Computer into a record player you set and forget.

A selection of eight quality classics fills JUKEBOX #1. The selections are "Overture to the Nutcracker" by Tchaikovsky, "Flight of the Bumblebee" by Rimsky-Korsakov, "Air on the G-String" by J. S. Bach, "String Quartet in Eb" by Mozart, "Brandenburg Concerto #5 in D" by J. S. Bach, "Well-Tempered Clavier" by J. S. Bach, "Fur Elise" by Beethoven, and "Fugue in C minor" by J. S. Bach. If you want to hear everything, an automatic play feature loads and plays each piece in sequence. As you listen to a piece, a piano keyboard plays notes on your TV screen, with each of the four voices in a different color. For additional fun, plug in your ATARI Paddle Controllers and change the tempo of a piece as it plays. (Note. The music on JUKEBOX #1 cannot be modified using the ADVANCED MUSICSYSTEM program because of space-saving measures taken by the author.)

The author invites questions and comments by telephone and mail.

REVIEW COMMENTS
This is an excellent way to show off the ATARI Home Computer's musical capabilities. The auto-play feature will be of particular interest to store owners and others needing a good sound demonstration program.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

PAL

OPTIONAL
One set of ATARI Paddle Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$15.95	APX-20135

QUARXON
by Scott Ludwig

Recommended for ages 7 and up/Written in machine language

Break through the boundary and destroy the Droids

You no sooner discover friendly droids in a new galaxy, QUARXON, when your scanner picks up enemy movement. Headquarters orders you to defend the droids against enemy attack. You have only one hunter-killer spaceship and your wits to outmaneuver both the enemy ship and the tricky elements unique to QUARXON's atmosphere.

Your primary objective is to fire your laser through randomly occurring openings in the center boundary line to break through the multilayered blockade protecting the enemy's droids, who want to take over the galaxy. At the same time, the enemy is trying to wipe out your droids. If the enemy's laser hits your ship, you face the immediate and often fatal danger of the crushing wall. QUARXON's atmosphere contains other precarious conditions. For example, if you shoot through the boundary line twice from the same spot, you create a temporary free shooting zone for the enemy, so you must keep moving at all times. And, if your shot misses an opening in the boundary line, the laser fire rebounds into your blockade! The battle ends when one ship destroys all his opponent's droids.

QUARXON has one- and two-player options, or you can watch the computer battle against itself. Other game options include choosing from three difficulty levels, varying the thickness of the blockade, and varying the number of droids. Fewer droids make for a more difficult battle, since the number of droids determines how many lives you have.

The author invites written questions and comments.

REVIEW COMMENTS
Unique rules make this game fast. Multishaded layers and smooth motion give it a polished look.

The user manual is VERY GOOD.

REQUIRES
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$29.95	APX-10174
Diskette (810)	24K	$29.95	APX-20174

EASTERN FRONT (1941)
by Chris Crawford

Recommended for teenagers and up/Written in machine language

A one-player simulation of the German invasion of Russia

Editor's Note: EASTERN FRONT has earned Chris Crawford the 1981 Charles Roberts Award for Best Adventure Game for Home Computers and *Creative Computing's* 1981 Award for Exceptional Creativity in Programming.

Operation Barbarossa, the German invasion of Russia during World War II started a campaign lasting nearly four years and taking nearly 20 million lives. Could you have done better than the real German commander? See how well you can maneuver your troops to obtain a good position before the winter sets in and the Russian counteroffensives begin!

EASTERN FRONT is an exceptionally complex one-player wargame. It re-creates the conditions of the campaign, including terrain, seasons, and types of military units, and it adjusts these factors over time. The game closely follows the historic sequence of events. The Germans sweep in, wiping out Russian armies everywhere. But the Russians keep fielding new armies and the Germans, depleted by a long campaign, start to wear down upon approaching Moscow. Reaching Moscow as the mud season sets in, the Germans fail to take the city. They resume their offensive thrust during the winter, making further gains, but they can't achieve decisive results. Their rapidly fading strength combined with the growing Russian strength first halt their advance and then force them to retreat. Your goal is to see if you can change the course of history, given the same physical conditions the German troops faced.

Each turn in EASTERN FRONT covers one week of history. To help you plan your moves, you can display vital information about a unit's muster and combat strength. For realism, you can move your troops only so far within a week. At the same time you're figuring your strategy, the computer is working out the Russian maneuvers. Hence, the longer you take to work through your moves, the more time the computer has to plan its own moves, (However, EASTERN FRONT has a handicap provision for novice wargame players.) Then on your command the computer simultaneously executes all orders. It moves troops and fights battles, taking into account terrain, type of unit, season, and presence of other units. Then it performs a variety of calculations related to the passage of time, including updating the date display, reconfiguring the map for the season, bringing in reinforcements, adding replacements, figuring logistics, and extracting penalties for troops whose supplies are cut off.

At the end of each week, the computer evaluates your performance and assigns you a score. Recalculated each week, your score reflects how far east your troops have moved, their aggregate muster strength, how far west the Russians moved, and their aggregate combat strength. In addition, if you captured key Russian cities, you earn extra points.

The use of intricate artificial intelligence routines makes EASTERN FRONT a challenging wargame. It approximates the true historical perspective of the campaign, making the game at once both complicated and rewarding to play. EASTERN FRONT also makes exceptional use of the technical capabilities of ATARI Home Computers. The result is a wargame that outshines virtually any other wargame available. For example, EASTERN FRONT uses player missile graphics to move your cursor smoothly over the foreground without disturbing the terrain and troops in the background. Multiple redefined character sets permit a colorful and detailed terrain along with a text display. A custom display list is responsible for EASTERN FRONT's unique screen format. Multiple display list interrupts allow for lots of color — as many as eighteen colors on the screen at a time. Fine scrolling gives EASTERN FRONT a map occupying roughly ten screens of area — 2 1/3 horizontal screens and 4 1/3 vertical screens — that scrolls smoothly in any direction. And multitasking permits simultaneous moves by both you and the computer.

REVIEW COMMENTS
This is the best computer wargame you've ever seen. The graphic display is incredible.

Because EASTERN FRONT eliminates the drudgery of playing wargames, many people who've never cared for wargames before can enjoy this one.

The game can take two or three hours to play and you can't save it, so be prepared for a marathon.

The user manual is VERY GOOD.

REQUIRES
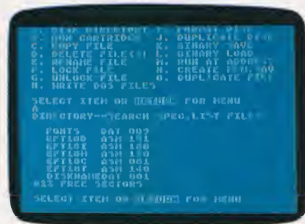One ATARI Joystick Controller

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$29.95	APX-10050
Diskette (810)	32K	$29.95	APX-20050

Premium
ATARI Staff

SOURCE CODE FOR EASTERN FRONT (1941)
by Chris Crawford

Recommended for advanced programmers/Written in assembly language

A behind-the-scenes look at creating a complex war game

You've played the game . . . now read the code! Intended for advanced programmers, this package takes you behind the scenes for a look at the thought processes involved in creating a sophisticated, computerized wargame. This diskette contains all the source code files for EASTERN FRONT (1941) — about 700 sectors of code! The user manual contains a complete source and object code listing, as well as the following sections:

Program structure review
Detailed memory map
Unit characteristics chart
Map diagrams
Explanatory essays on each module
Narrative history of EASTERN FRONT development
Discussion of game design considerations

The package is like a tutorial on advanced game design.

The diskette contains only the source code (that is, the English equivalent of the code the computer runs) for EASTERN FRONT. The object code (that is, the code the computer runs) is sold separately as APX-20050. Only advanced programmers should consider using the source code in this package to create an object file for running EASTERN FRONT instead of purchasing the object code.

The thick, detailed user manual is VERY GOOD.

REVIEW COMMENTS
To get maximum benefit from this package, you need a good understanding of assembly language programming and you should be comfortable using the Assembler Editor Cartridge. Assembly language programmers inexperienced in writing large programs will especially benefit from this package.

REQUIRES
Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$49.95	APX-20095

DOG DAZE, REV. 1.1
by Gray Chang

Recommended for ages 8 and up/Written in machine language

Claim more hydrants than your opponent

Have you ever wondered what attracts Fido to every hydrant he passes? DOG DAZE probably can't solve the mystery, but this game gives you the chance to put yourself in Fido's place. DOG DAZE is a fast-paced, two-player action game requiring skill, strategy, and luck. You control your dog with your joystick. Each time a fire hydrant pops up on the screen, your dog and your opponent's scramble to claim it first. Because only one unclaimed hydrant pops up at a time, you're both after the same target. You claim a hydrant either by running into it or by shooting your bone at it. However, if your bone misses, you'll have to retrieve it before you can shoot it again. Each claimed hydrant changes to the color of the claimant. Every once in a while, a reckless driver comes through, knocking out hydrants and threatening to strike the dogs. As the game progresses, claimed fire hydrants start filling the screen. You can zip right through your own hydrants, but if you run into your opponent's hydrant, you're penalized. A scoreboard of fire hydrants at the top of your TV screen shows who's ahead. The winner is the holder of more hydrants at the end of the time you set for the game, or the first to fill the scoreboard. You can set the time limit from 1 minute to 16 minutes. DOG DAZE also has a handicap option so that novice hydrant chasers can challenge pros. Revision 1.1 corrects a minor bug.

REVIEW COMMENTS
This game is fun! It spans all ages. Kids will like the dogs, hydrants, and sounds, and adults will enjoy its competitiveness, especially with the time option.

The game could use a few more features and fancier graphics.

The user manual is VERY GOOD.

REQUIRES
A set of ATARI Joystick Controllers   PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	8K	$22.95	APX-10069
Diskette (810)	24K	$22.95	APX-20069

AIR-RAID!
by Chuck Gibke

Recommended for ages 8 and up/Written in machine language

NEW

2nd Winter 1982

Head off the bombers before they reach the city

Whoop-whoop-whoop! Samuel quickly jumps into his plane and takes off. Once airborne, he flies straight for the bomber formation. A quick burst from his guns and the first one falls. The rest follow, and then the second wave. "A piece of cake," Samuel gloats as he lands to refuel.

Soon the next strike appears on the radar scanner. Taking to the air immediately, Samuel bears down on the lead bomber but feels a nasty blast from the bomber's forward guns. Swinging in from behind, Samuel polishes off the remaining planes. "Got to be more careful," he mutters.

As Samuel engages another strike force, he suddenly realizes he faces a larger formation—and fighters! Panicked, Samuel dumps his tanks and quickly returns to the airstrip to refuel. The fighters are dogging his tail. A bomb falls on the radar beacon and the scanner blanks out. Then bombs wipe out the airstrip. Samuel can't land; his aircraft can take no more and the fight is over.

You face exactly the same conditions as Samuel in AIR-RAID! You must defend your aircraft, the radar beacon, and the two airstrips against enemy bombers, which appear in increasing numbers, some with fighter escorts. You fly over eight scrolling screens of landscape. Your final score shows how good a fighter pilot you are and AIR-RAID! keeps track of the high score for the game session.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
The real time animation is very good. This kind of game is possible only through machine language.

The user manual is EXCELLENT. It's detailed and fun to read.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$29.95	APX-10187
Diskette (810)	24K	$29.95	APX-20187

BLOCK BUSTER
by Alan Griesemer and Stephen Bradshaw

Recommended for ages 9 and up /Written in QS Forth

A cube puzzle and puzzle solver

What do you do when you're faced with 43 quintillion possible combinations for solving a puzzle? "The cube" puzzle is a national obsession and it has caused many of us untold frustration. BLOCK BUSTER can help you master that innocent-looking block.

The challenge of cubic puzzles is to unscramble a patchwork of colors so that each side ends up a different solid color. BLOCK BUSTER offers significant advantages over both the cube itself and printed solutions. For one thing, all six sides of the cube display at once! You move the cube's faces either directly with a Paddle Controller or indirectly by entering simple commands in a command window. The program translates your Paddle Controller moves into the corresponding commands and displays them in the command window, letting you note and repeat successful series of moves. The authors base their commands on the notation used in Douglas Hofstadter's article, "Metamagical Themes," in the March 1981 issue of *Scientific American*. Also of great help is the ability to set up the cube to conform to the configuration of a real cube you're stymied by and then, with one command, tell BLOCK BUSTER to solve the puzzle! The program records its moves in the command window. You can also command BLOCKBUSTER to scramble a puzzle for you, when you feel like facing the unknown. Cube fanatics will appreciate the program's timer and move counter displays. Warning! You probably won't spend any less time working cubic puzzles because of this program; BLOCK BUSTER itself is highly addictive.

The authors invite written questions and comments.

REVIEW COMMENTS
Program features are comprehensive. The SCRAMBLE and SOLVE commands are particularly useful. The graphics representation of the block is well done.

BLOCK BUSTER isn't suitable for black and white televisions.

The user manual is VERY GOOD.

REQUIRES
No required accessories

PAL

OPTIONAL
One ATARI Paddle Controller
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$15.95	APX-10110
Diskette (810)	32K	$15.95	APX-20110

GALAHAD AND THE HOLY GRAIL
by Douglas Crockford

Recommended for ages 12 and up/Written in machine language

A graphic adventure with almost 100 rooms

Harken back to the days of old and the legend of Arthur and the Knights of the Round Table. As you recall, in King Arthur's court several knights set off in search of the Holy Grail. Only the truly virtuous succeeded.

With GALAHAD AND THE HOLY GRAIL, you become one of the knights on this holy mission. First you decide on your goals. You must swear (this *is* a game of honor) to accomplish one or more of several goals, such as to find three keys, find the Holy Grail, return the Grail to the white chapel, or slay all monsters. If you and some friends wish to play a tournament, you first agree on the goals and then take turns playing a complete round.

The first screen displays the white chapel, the beginning of your journey. Using your Joystick Controller, you guide your knight through a terrain of walls, roads, meadows, forests, and other obstacles. Some of the walls have magnetic powers. You can enter secret portals when you pass over them. As you travel horizontally, vertically, backwards, and forwards, you will encounter dangers from such unexpected sources as travelling knights, a dragon, and spiders. If you're lucky, you've found a variety of implements to help you fend off the attackers and assist in your search. If one of the challengers defeats you, the game starts again and another player tries to reach the goal. GALAHAD AND THE HOLY GRAIL comes in two levels of difficulty.

The author invites written questions and comments.

REVIEW COMMENTS
With the monsters, keys, swords, evil knights, castles, and mazes, the game is spellbinding. The action is fast and challenging. The colors and graphics are fun. Secret portals and enchanted walls give elements of surprise.

The user manual is as wonderfully imaginative as the game!

REQUIRES
One ATARI Joystick Controller

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$29.95	APX-20132

AVALANCHE*
by Dennis Koble

Recommended for all ages/Written in machine language

Absorb falling rocks with shields

If you like fast-moving games that challenge your manual dexterity, then you'll love AVALANCHE. Six colored layers of graduated rocks are poised overhead. You score points by absorbing the falling rocks with a stack of rectangular shields before the rocks hit the ground. You maneuver your shields back and forth across the bottom of the screen with a Paddle Controller. The impact of the rocks gradually wears away the number and size of your shields, but the rocks keep coming, smaller and faster. If you manage to ward off all the rocks, you face yet another avalanche, but with fewer shields!

Compete against your own best score or pit your skill against an opponent. Four bonus levels challenge your ever-increasing skill. Your chosen bonus level determines the number of misses you're allowed and the number of points you must obtain to earn an extra turn.

REVIEW COMMENTS
Great use of the ATARI Computer's colors, graphics, and sound. Patterned after the ATARI arcade game of the same name, this game really appeals to all ages — it's simple enough for young players, but it challenges experienced players. It's not meant to be a game of strategy, but is rather a game demanding good motor skills. Makes a great party game.

Your TV picture must be centered to accommodate the playing field.

The user manual is VERY GOOD.

REQUIRES
ATARI Paddle Controllers

PAL

ORDER INFORMATION

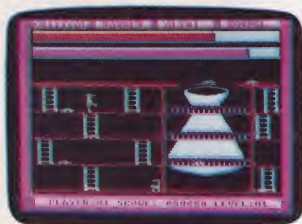| Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10003
Diskette (810)	16K	$22.95	APX-20003

*AVALANCHE is a trademark of Atari, Inc.

MELT-DOWN
by Stephen Romejko

Recommended for ages 8 and up/Written in machine language

NEW

Fill a leaking reactor before it melts

A small-town nuclear power plant has sprung a leak in its cooling tower. As the lone night watchman, you're faced with maintaining a safe water level in the tower to prevent a nuclear disaster. To do so, you carry buckets of water from basement up to the roof and over the water tower, where you empty them and run back for more. But, the leak in the tower has caused radioactive water to run off into a nearby reservoir. The contaminated water is creating strange behavioral changes in the plant's mice population; they now actively seek humans, and you're the only one around.

Played with a Joystick Controller, MELT-DOWN offers several challenges. First, you fill your bucket by lightly tapping your joystick; too heavy a hand results in overfilling and spilling the water. Then, you use the joystick to climb all the stairs, jumping over any pursuing mice, to reach the top of the tower without tipping the bucket and then empty the water into the tower. You've got to keep the water level up, trying to fill the tower faster than it's leaking. A water level indicator shows you how you're doing. If the indicator reaches bottom, melt-down occurs, annihilating you, the plant, and the surrounding area. You earn points for every bucket of water you empty into the tower and for every mutant mouse you leap over. Managing to refill the tower and repair the leak earns you bonus points.

MELT-DOWN has four skill levels, which vary the speed of the action, size of the mice, and points scored. In case a friend wants to compete for the high score, MELT-DOWN has a two-player option.

REVIEW COMMENTS
This is a fun, fast game all ages should enjoy. You have to time your jumps over the radioactive mice just right. Your TV picture must be centered to accommodate the playing field.

The user manual is EXCELLENT. It contains helpful graphics, strategy, and scoring information.

REQUIRES
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10178
Diskette (810)	32K	$22.95	APX-20178

PHOBOS
by Greg Christensen

Recommended for ages 8 and up/Written in machine language

NEW

3rd Winter 1982

Master 16 levels of defense

Did you wear out your Joystick Controller playing Caverns of Mars*? If so, run right out and buy another one. Greg Christensen has done it again! He's traveled even farther into the cosmos to bring us PHOBOS, Mars' closest and largest moon, where a group of renegade martians have set up a command center.

You must cut through sixteen levels of defense to destroy the control center buried deep in the core of PHOBOS. At first, you plummet through caverns, picking up fuel and knocking out missiles as best you can. However, due to the small diameter of PHOBOS, the gravity exerted on your ship isn't noticeable after a while, and you can soon control your speed. But, it's small consolation considering you face incredibly narrow and craggy paths—a real challenge to negotiate successfully. And that's not all. You must get past many different barriers, such as compound laser gates requiring fine timing and deft steering. Your mission doesn't end should you detonate the control center. You must begin your descent anew, because the martians will rebuild the control center as soon as you destroy it!

PHOBOS comes with four skill levels, from novice to commander. Each higher skill level requires navigating through more caverns. Both your current score and the high score for the session display, along with your fuel gauge and your current cavern.

The author invites written questions and comments.

REVIEW COMMENTS
Fans of Greg's first game will want to try their skill at maneuvering through caverns offering new obstacles. The graphics, sound, and design are along the lines of Caverns of Mars and are all very good.

The user manual is VERY GOOD.

REQUIRES
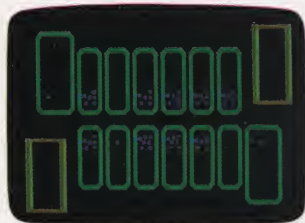One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$29.95	APX-20184

*CAVERNS OF MARS is a trademark of Atari, Inc.

MANKALA
by Elizabeth Chase MacRae

Recommended for ages 8 and up/Written in machine language

A computerized African stone-and-board game

The stone age has met the computer age! Mankala, an ancient African game traditionally played with stones on the ground or on a hand-carved board, is now available on your ATARI Home Computer. But the computerized MANKALA remains faithful to the original game's rules and format.

Each player owns six small playing bins and one large home bin, which are arranged as two parallel sets. Players take turns picking up all the stones in one of their playing bins and dropping one stone in each bin in a counterclockwise direction. They move the stones by using a Joystick Controller to position their yellow marker over a bin and then pressing the red joystick button. MANKALA automatically picks up all the stones and drops them in the other bins. Each stone dropped into a home bin remains there permanently, and whenever the last stone in a turn lands in the player's home bin, the player takes another turn. The game ends when one player empties all the playing bins in his set. The holder of more stones is the winner.

Players can start with between three and eight stones per bin. Two players can compete against each other or one player can challenge the computer on different levels. All it takes is one or two rounds to appreciate the clever simplicity and enduring appeal of MANKALA.

The author invites written questions and comments.

REVIEW COMMENTS
Novices will find MANKALA easy to learn, while experienced players will still find the game challenging. At the fifth level of difficulty, the computer is a very challenging opponent, but the computer may take up to 1-1/2 minutes to move. All other levels of computer play are very fast.

The user manual is VERY GOOD.

REQUIRES
One ATARI Joystick Controller per player   **PAL**

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10156
Diskette (810)	16K	$22.95	APX-20156

ATTANK!
by Joel Gluck

Recommended for ages 10 and up/Written in BASIC

Destroy your opponent's tanks on the battlefield

Allow yourself plenty of elbow room when you and your opponent start playing ATTANK! You'll be happily squirming in your chair as you maneuver your two tanks around the battlefield. In this two-player game played with joysticks your mission is to destroy both your opponent's tanks before he or she destroys yours. You maneuver your forces through a realistically responsive environment of trees, rocks, walls, land mines, tunnels, and rubble and then position and fire your guns when your opponent's tank is within firing range. You can choose day or night battle conditions, or a mixture of the two. If you opt for nighttime, only the tanks and shells are visible on the battlefield, except for brief glimpses during explosions.

Packed with colorful graphics and sound effects, ATTANK! is loaded with playing options, such as the number of hits a tank can sustain before being destroyed, shell range, tunnel pattern, and day and/or night battle conditions. You can choose whether to introduce an element of chance into the game by using the random air raid bomb option. ATTANK! also includes two handicap options so that novices can give pro tank players a real workout. All these options, along with a new battlefield layout every game, create almost unlimited game variations and let you customize the game's battle conditions according to each player's skill.

The author invites written questions and comments.

REVIEW COMMENTS
ATTANK! is a deluxe version of the standard tank game. The unique two-tank control and the tunnels are great features. The author makes very interesting use of character graphics, especially in the program's introduction and conclusion.

That the tanks turn only in one-eighth increments can be challenging when trying to hit your opponent at close range. Tank motion can be uneven at times.

ATTANK's many options take some reading to understand, but the effort is worthwhile.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge   **PAL**
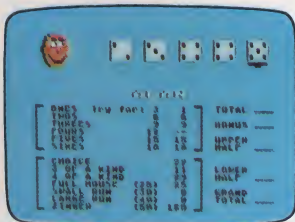A set of ATARI Joystick Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10072
Diskette (810)	32K	$22.95	APX-20072

YAHTMAN
by Dan Reinhart

Recommended for ages 6 and up/Written in BASIC and machine language

NEW

Play dice poker with Yahtman

Most of us have played some version of the popular dice poker games available in both paper/dice and computerized form, but YAHTMAN is a cut above the rest. For one thing, YAHTMAN joins in every game himself, along with one to six other players. For another, this fellow is very friendly; he sends messages and performs helpful chores throughout the game. And most unusual of all, he shows by his facial expressions what he thinks at all times—for good or bad!

A game of YAHTMAN consists of thirteen rounds of play for each player. In each round, you use a Joystick Controller to roll any or all of five dice up to three times to obtain one of thirteen scoring combinations, such as aces, three of kind, and full house. But you must select some combination each turn, even if you score zero points. You earn bonus points for rolling five of a kind or for high scores. At the end of each round, YAHTMAN suggests which combination will earn you the most points, but you can ignore him and pick any unused combination. As you study each choice, YAHTMAN helpfully displays the score you would earn by picking that choice. At the end of the game, YAHTMAN totals each player's score.

The author invites written questions and comments.

REVIEW COMMENTS
YAHTMAN's "human" traits make him a more companionable computer opponent than normal. His helpful nature gives kids a better chance against adults.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10175
Diskette (810)	24K	$22.95	APX-20175

SALMON RUN
by Bill Williams

Recommended for ages 8 and up/Written in machine language

Help Sam the salmon swim upstream to spawn

The story of the determined salmon, struggling upstream to spawn every season, takes a slightly different twist with SALMON RUN. The mighty little fish struggles upstream, fighting bears, waterfalls, and sea gulls. But, is it all for naught? Does he merely die in the end? Now his fate lies in *your* hands.

The screen display of this automatically loading program shows a salmon in a vertical river course, flanked by a jagged shoreline. At the top of the screen is a display of the game level and your score. Using a Joystick Controller, one to four players take turns guiding Sam the salmon up the river to reach his dear Samantha.

Each game level includes an increasingly difficult series of river courses. Sam faces a variety of complicating circumstances during his journey upstream. He must overcome waterfalls, bears, fishermen, and sea gulls. The frequency of their appearances depends on how long you play the game. Sam can jump the waterfalls and sidestep the fishermen or animals, but if he misses, he starts his trek upstream all over again.

Sam's struggle upstream is timed by a shrinking horizontal bar at the top of the screen. He races the line as well as the life-threatening river course. Should Sam successfully complete one lap, he wins Samantha and a baby salmon.

You win one point for every foot you help Sam swim and ten points for every waterfall he jumps. You lose points if you cause him to fall backwards. In a one-player game, you compete against your own best score. In a multiplayer game, you play for the highest score.

The author invites comments and questions by telephone and mail.

REVIEW COMMENTS
"Children" of all ages will enjoy SALMON RUN. The graphics are charming!

The user manual is VERY GOOD.

REQUIRES
One ATARI Joystick Controller per player

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10120
Diskette (810)	24K	$22.95	APX-20120

DOWNHILL
by Mark Reid

Recommended for ages 8 and up/Written in BASIC and machine language

Steer your skier around trees and through gates

Brrrrr! The nippy air triggers your yen to ski. But it's hard to get away, and even when you can get away, the crowds are starting to spoil your fun. Help is here! With DOWNHILL, you can sit by the fire, sip a cup of hot chocolate, and ski to your heart's content. Not only that — you have the slopes all to yourself! This one-player game challenges your hand/eye coordination and timing precision (but your legs can relax). You use a Paddle Controller to steer your skier around trees and through gates on the beginner, intermediate, or expert course. If you like, you can preview each course before running it, or you.can run it sight unseen. The intermediate and expert courses have narrower openings between trees and you'll have to turn your skier uphill if you hope to make every gate. When necessary, you can snowplow (slow down) to avoid hitting a tree or gatepost, which cost you precious seconds. Besides choosing the difficulty of your course, you can also vary the degree of the slope to decrease or increase the speed with which your skier runs the course.

The object is to ski to the bottom of the hill as fast as possible, while making every gate. Each gate missed causes a score penalty. The program keeps track of the best time for each course, so you can compete against a friend's time or against your own best time. SWOOSH! Time to hit the powder!

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
DOWNHILL makes colorful and imaginative use of the ATARI Computer's sound effects and graphics features, including vertical scrolling and player missile graphics.

Recovery after wrapping your skier around a tree can be maddeningly slow!

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
ATARI Paddle Controller

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10063
Diskette (810)	32K	$22.95	APX-20063

747 LANDING SIMULATOR
by William J. Graham

Recommended for ages 12 and up/Written in BASIC

Land your own 747 jet airliner

Here's a game that gives all would-be jumbo jet pilots the frustration, anxiety, and thrill of landing their very own 747 jet airliner. From the cockpit, you see the airport runway and horizon presented in true perspective; your instrument panel display, which is continuously updated, appears at the bottom of your screen. Runway lights flash for pilot guidance, and they brighten as you approach the airport. For further realism, you hear the sounds of air turbulence, various warning signals, and other events. You even hear your engines' deceleration upon landing your aircraft successfully. However, you'll probably have to practice landing many times before you get this far. At the end of your flight, you receive a score that reflects not only your expertise in landing safely but also the quality of your runway approach—how much fuel you used and how long you took to land. The game has three levels of difficulty and two options—landing with instruments on and with instruments off (that is, the instrument display isn't updated).

747 LANDING SIMULATOR uses some interesting graphics. For example, it uses player missile graphics for the midair collisions, a custom designed character set, and a modified display list to obtain large text in the text window.

The author invites questions and comments by telephone.

REVIEW COMMENTS
This game is fascinating, complex, and hard to master. The joystick commands take getting used to. The game calls for patience and perseverance.

Because the game is written in BASIC, it doesn't have the illusion of real-time flight.

The user manual is VERY GOOD. You must read it to understand how to play the game.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10043
Diskette (810)	32K	$22.95	APX-20043

SOLITAIRE
by Mark Reid

Recommended for preteenagers – adults/Written in Basic

**A computerized version of
the card game**

You're all knotted up inside because you can't get your mind off the sale you lost yesterday, your overdue mortgage payment, and your wife's recent spending spree at Saks Fifth Avenue. You can usually calm down by playing some hands of solitaire, but your preschooler cut up your last deck of cards to get at all those pretty pictures on the backs. Once again, your ATARI Home Computer can come to your rescue!

SOLITAIRE is a computerized version of the standard, one-player Las Vegas card game. At the top of the screen display are the four ace playing areas, where your goal is to place as many cards as possible to win money. Below this area are seven columns for your seven piles of cards, with one card number and suit face-up in each column. Above each column a number indicates how many cards are face-down in that pile. Beneath the columns is the deck and card discard area. You use your Joystick Controller to pick up and then place a card or stack of cards. Spades and clubs display in inverse video to simulate the red/black difference in card suits.

After playing through the deck once, positioning all the cards possible to build up the ace areas, you earn $5.00 for every card you've placed in that area. The computer keeps track of the money you win or lose and of the time elapsed. This version lets you play through the deck as many times as you like, but the program calculates money earned/lost and elapsed time only for the first pass. Thus, you can play to completion without affecting the true results. See how long it takes you to win $500 (maybe you will have calmed down by then)!

The author invites written questions and comments.

REVIEW COMMENTS
The human engineering and use of the Joystick Controller are very good. This is a realistic simulation of solitaire.

The playing board could use more color and better graphics.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
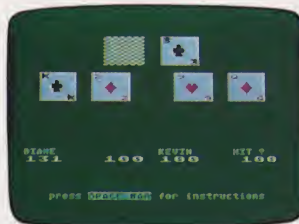One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10089
Diskette (810)	24K	$15.95	APX-20089

BLACKJACK CASINO
by Bill Zimmerman

Recommended for ages 10 and up/Written in machine language

**A computerized version of
blackjack for 1-4 players**

Set out the drinks. Place bowls of munchies around the room. Dim the lighting. Evening dress, however, is optional at this casino. Now invite from one to four players to gather 'round your ATARI Home Computer and spend an enjoyable evening playing blackjack.

BLACKJACK CASINO conforms to the standard game, for many years a worldwide favorite, but it also lets you double down when you have fewer than 12 points, split pairs (in games of one or two players), surrender if you want to cut your losses, and take insurance when the dealer's face-up card is an ace. In addition, it uses the five card Charlie rule (any player holding five cards without exceeding 21 automatically wins against the dealer).

You use your Joystick Controller to enter your initial stake, your bet, and all your playing decisions. You can restart the game at any time and, should you be so unfortunate as to require more money, you can add money to your stake during the game. Depending on their luck and skill, players will come and go during the evening, but the dealer is blessed with unlimited funds, and your BLACKJACK CASINO will provide unlimited hours of entertainment!

The author invites written questions and comments.

REVIEW COMMENTS
BLACKJACK CASINO is strictly for fun, whereas BLACKJACK TUTOR (APX-10057 and APX-20057) is both for fun and for working on improving your strategy. However, the instructions for BLACKJACK CASINO do contain some strategy suggestions. Also, BLACKJACK TUTOR is meant for one player, whereas as many as four players at a time can play BLACKJACK CASINO.

The graphics are well done, especially the card designs.

The user manual is VERY GOOD.

REQUIRES
One ATARI Joystick Controller per player
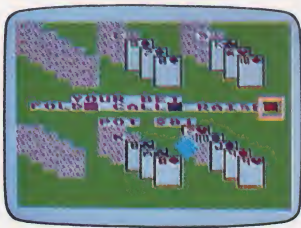
ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	8K	$15.95	APX-10064
Diskette (810)	16K	$15.95	APX-20064

SEVEN CARD STUD, A USER PROGRAMMABLE SIMULATION
by Monty Webb

Recommended for ages 10 and up/Written in BASIC

Play poker with five computer opponents

That big game is coming up and you need to practice your poker skills. What strategies work against the new player in your group? How's your bluffing? Do you remember when to fold, hold, and raise? SEVEN CARD STUD simulates five card-playing partners with four programmable characteristics.

Using a Joystick Controller, you can change the players' characteristics. If you're new to SEVEN CARD STUD, use the pre-programmed personalities, which are quite a challenge. If you're ready to sharpen your card techniques or create your own competition, you can choose one of three traits in four different categories for each player. First, you decide if a player is hard, average, or easy to bluff. Next, you decide how often this player raises. Then you choose the degree of risk he'll take before he folds. Finally, you determine his overall playing strategy — too loose, smart, or too tight. You answer these questions for each player.

SEVEN CARD STUD shuffles the cards and deals two down and one up to each player. The program finds the highest hand showing and starts the betting. According to the player's programmed characteristics, he will fold, call, or raise. The other players respond in turn. When it's your turn, you also choose to fold, call, or raise. The pot grows as you bet on each round. At the end of seven cards, all hands still in the game turn face-up. SEVEN CARD STUD then determines the winner and the announcement, "Who Has The Gold?", appears with a list of everyone's winnings. You can then go back and see everyone's cards for study.

At the end of a game, you can play another hand against the same players or you can restart the game and change the players' personalities.

The author invites written questions and comments.

REVIEW COMMENTS
This game is not a beginning tutorial. The graphics are very good. Poker players are sure to enjoy this excellent simulation.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$15.95	APX-10118
Diskette (810)	32K	$15.95	APX-20118

CRIBBAGE
by Jose R. Suarez

Recommended for ages 12 and up/Written in BASIC

A one-player English card game

If you're not a cribbage player already, this program will turn you into one. And if you are one already, CRIBBAGE offers you an opponent who's smarter than you think, and always ready to play.

CRIBBAGE is an original computer graphics interpretation of the well-known card game of skill and chance. It's a race to the finish line, 121 points, between you and the computer. The cribbage board is your racetrack. Using your Joystick Controller to play, you pit your ability against the computer's to assemble and count combinations of fifteens, straights, pairs, and flushes. Each round of play has two phases: head-to-head card playing, in which you try to outwit the computer, and a counting phase, in which you try to outscore the computer.

CRIBBAGE has four levels of difficulty. The computer will always play its best but the difficulty level determines the amount of scoring help you get. At the beginner level, the program displays each scoring set of cards. At the novice level, the computer counts all your points for you. At the intermediate level, you must count your own points, but you have an unlimited number of tries to arrive at the correct score. At the card shark level, you must count your points very carefully, since the computer will steal any points you miss! The program's complete graphic display of the game's components, its accompanying sound effects, and its joystick handling make this version of cribbage enjoyable and challenging.

The author invites written questions and comments.

REVIEW COMMENTS
CRIBBAGE uses good high-resolution graphics, but all the cards' suits display in blue. The program follows standard cribbage rules. The beginner level is a good tutorial. The joystick action makes this a quick and exciting game.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$15.95	APX-10141
Diskette (810)	40K	$15.95	APX-20141

GRAPHICS/SOUND DEMONSTRATION

Recommended for all ages/Written in BASIC and machine language

Demonstrations of the ATARI Computer's graphics and sound effects

This diskette shows off the ATARI Computers' outstanding graphics and sound effects capabilities. An ATARI Computer can produce 128 different colors (16 colors, each at 8 levels of brightness). Use these colors in myriad shapes, patterns, and sequences and just try to imagine the range of special effects possible! This diskette illustrates but a few of the many two- and three-dimensional effects you can achieve with an ATARI Computer. The diskette also contains a scrolling map that demonstrates the ATARI Computers' fine scrolling capability; the assembler source code is included to let you see how it works. By studying the source code of any of these programs, you can adapt the techniques to your own applications.

REVIEW COMMENTS

Even on a black and white screen these graphics are impressive; on a color screen, they're stunning!

The user manual is VERY GOOD for running the programs but only FAIR in explaining how the programs work.

REQUIRES

ATARI BASIC Language Cartridge
ATARI Joystick Controller
ATARI Paddle Controllers

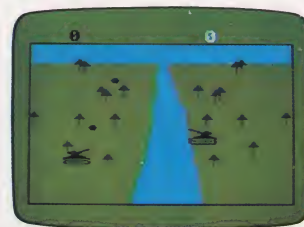### OPTIONAL

ATARI Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$15.95	APX-20028

OUTLAW*/HOWITZER

Recommended for all ages/Written in machine language

Two games of marksmanship

Here are two games to show off your marksmanship. In OUTLAW you square off against another cowboy, who has you cornered in the desert. Fortunately for you, you can hide behind cactuses to elude his bullets. You use your Joystick Controller to chase your opponent and to take aim, then to scamper out of range as he fires back at you. You can run him all over the desert, but he's a real sharpshooter, so you'll be doing some fancy footwork to get him before he gets you. The first to score ten hits is the winner.

In HOWITZER your tank confronts the enemy tank across a river, which neither of you can cross. You hear your tank rumble as you use your joystick to maneuver around the field. But you can't count on the trees to protect you from enemy fire. Each cannonball you fire that misses its target leaves a hole in the field, but you'll know when either of you has scored a hit — the earth shakes and the tank explodes. The first to score ten hits is the winner.

You can play OUTLAW or HOWITZER against the computer or against another player. To compensate for different levels of skill, each side can play with or without handicaps — each game has eight variations.

REVIEW COMMENTS

Both games use colorful, action-packed graphics and sound effects, which make these games appealing to players of all ages and levels of skill. A good party game!

The user manual is VERY GOOD.

REQUIRES

ATARI Joystick Controller(s)

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10004
Diskette (810)	24K	$22.95	APX-20004

*OUTLAW is a registered trademark of Atari, Inc.

Premium ATARI Staff

GAME SHOW
by Hung A. Pham

Recommended for ages 10 and up/Written in BASIC

Predict the most popular answers to questions

How often have you watched a game show on television and thought, "How dumb! I can do much better than that!" Well, load GAME SHOW into your ATARI Home Computer and see if you really can do better under similar conditions.

Styled along the lines of a current TV program, GAME SHOW tests your ability to predict the most popular answers to various questions. The game works basically as follows. A question scrolls across the bottom of the screen with all the correct answers concealed. Two players then compete for the right to guess the most popular answers within the time limit decided prior to the contest. If the player guesses the most popular answer, he can try to guess all the correct answers before three misses, or he can elect for his opponent to try. If the player winning the right to guess misses the most popular answer, his opponent gets a chance to guess, with the same options if he guesses correctly. As the players enter guesses, correct ones display in their appropriate rank and the players earn points. Play then continues through a set of ten questions. The winner is the one with more points at the end of the set.

GAME SHOW comes with 200 questions and 1155 answers. When you start recognizing the questions, you can create a separate data diskette of your own set of questions and answers to GAME SHOW (and print them) and continue to challenge your family and friends. Try it! Maybe you'll sympathize more in the future with a contestant whose mind "goes blank" when the pressure is on.

The author invites questions and comments by telephone.

REVIEW COMMENTS
This program is fun for group play. The graphics aren't great, but they're functional. Too bad the computer won't kiss all the contestants.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge
Two ATARI Joystick Controllers

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20168

PUSHKY
by Yakov Epelboim

Recommended for ages 6 and up/Written in machine language

Zap the clouds with your pushky

Imagine you've been spirited away to a world populated only by floating clouds of all sizes and by pushkies, which look remarkably like tiny Joystick Controllers. In this strange world, the principal pastime of pushkies is pushing clouds and other pushkies. In fact, that's the object of PUSHKY, a two-player game played with joysticks.

You earn points by "pushing" more clouds than your opponent and by pushing your opponent. You push by firing missiles from your pushky. Each time you hit a cloud, which can appear anywhere, it disappears and your pushky magically appears in its place. Each time you hit your opponent's pushky, it spins around and disappears. Of course, your opponent is intent on pushing your pushky, too, and on going after the same clouds. Fortunately for you both, spare pushkies wait to fill in for hit pushkies, and you can earn more spares by accumulating points for pushed clouds. You can win at PUSHKY either of two ways: by eliminating all your opponent's pushkies or by being the first to reach the "V" (for "Victory") at the end of the cloud indicator bar.

Dedicated PUSHKY players can then advance to CRAZY PUSHKY on the same game diskette. This version plays all kinds of visual tricks on you. For example, sometimes the clouds take on the same color as the background, and sometimes a pushky takes on the background color. But we won't give away all the tricks!

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
PUSHKY is in a class by itself in terms of game format. At least, we have nothing else like it in APX. In this very colorful game, the graphics are simple but fitting. The game requires joystick finesse. PUSHKY isn't recommended for black and white televisions.

The user manual is VERY GOOD.

REQUIRES
A set of ATARI Joystick Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	48K	$22.95	APX-20186

BABEL
by Joel Gluck
Recommended for ages 8 and up/Written in BASIC

Build towers to reach the stars

BABEL is a fast-moving, two-player game packed with sound effects and graphics. You're in a race to build a tower to reach the stars overhead. Which kind of builder are you? One that lays a solid foundation or one that lets the bricks fall where they may? You use your joystick to lay the bricks that let you climb to the stars and you score points with each star you touch. You win by outscoring your opponent, but you can also lose at any point if you box yourself in with bricks. In addition, building too precarious a structure can cause you to fall and lose points. And just when you think you finally have the game sewed up, you can become the victim of a celestial event or you can incur the wrath of the heavens!

Play BABEL for preset goals, set your own goal, or play an open-ended game. BABEL has three levels of difficulty.

The author invites written questions and comments.

REVIEW COMMENTS
BABEL is an imaginative game that uses ATARI Computer sound and graphics features creatively.

Playing BABEL takes both dexterity and forethought. At the same time, it's playable on many levels, making it fun for experienced as well as for novice players.

Owing to the colors used, BABEL isn't suitable for black and white TV screens.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
A pair of ATARI Joystick Controllers

| PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10038
Diskette (810)	24K	$22.95	APX-20038

PUSHOVER
by Joel Gluck
Recommended for ages 8 and up/Written in BASIC

React quickly to push your opponent over a cliff

You're locked in a life-or-death struggle high atop a sheer cliff. Two more steps and it's curtains. But wait! Your strength returns and you start pushing your opponent to an untimely demise. You did it! You've won your first round of PUSHOVER.

Once the game starts, a two-sided cliff appears on the screen and a helicopter airlifts one of each player's three warriors to the battleground. The fighters bow to each other and the fight begins! As quickly as possible you must interpret the command symbols displayed on the face of the cliff. You race to respond to the commands with your joystick. With each correct response, you push your opponent closer to the edge of the cliff. The battle can rage back and forth until finally the one who persists with the faster correct responses wins the round as the other warrior plunges to the ground. The battles continue until one player loses by having no remaining warriors. After catching your breath, you can then choose to play another game using the same levels of difficulty, change the options, or leave the battlefield until another day.

PUSHOVER has several interesting options. At the start of the game, you can choose one of three types of symbols or a mind-boggling mixture. You can vary the computer's skill from "easy victim" to "invincible opponent" in a one-player game. In a two-player game, a handicap option lets novices battle warriors.

The author invites written questions and comments.

REVIEW COMMENTS
PUSHOVER is both simple and intense. The graphics and animation are very good. The title and setup are as entertaining as the game.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

| PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$22.95	APX-10116
Diskette (810)	32K	$22.95	APX-20116

BLOCK 'EM, REV. 2
by Jose Suarez

Recommended for ages 8 and up/Written in BASIC

Force your opponent into a wall

With BLOCK 'EM you can vent your aggressions and enjoy yourself at the same time. One or two players can select from several game variations. In the two-player game, you each build a maze-like wall with your joysticks, trying to be the first to box in the other's wall. Every collision you force on your opponent earns you a point as well as the satisfaction of seeing your opponent's wall glow and then disintegrate before your very eyes! Simultaneous collisions of both players earn no points for either one. This version has options for determining the winning score (for quick or prolonged games), block size, and play speed.

Or, you can select from two one-player versions. In Ghost Wall, you compete against the computer, but the computer's wall has a distinct advantage — it can pass through yours. In Captive Sssnake!, you move your snake around the field trying to reach the escape hole before colliding with anything. After your snake reaches a certain length, it remains that length as it moves around. Each time you reach the escape hole, your next snake grows!

The games demand both reflex speed and strategy, but the relative importance of each depends on the options you select. Revision 2 adds the two one-player variations, offers a black-and-white TV screen option, and improves joystick response at slow speeds.

The author invites written questions and comments.

REVIEW COMMENTS
The options make this game more interesting than the standard versions. The losing player's disintegrating wall creates an amusing effect.

The one-player games aren't as fun as the two-player game, but are good for practice.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
A set of ATARI Joystick Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10090
Diskette (810)	24K	$15.95	APX-20090

SPACE CHASE
by Fernando Herrera

Recommended for ages 8 and up/Written in BASIC

Conquer all the planets to enter the next galaxy

You're in a beautiful, colorful galaxy. Your mission is to conquer all the planets for the Galactic Federation and then go on to the next galaxy. A piece of cake, right? But don't forget about those dreaded Clone Robot Ships that will pursue you relentlessly to every corner of space, destroying every planet in its path, planets the federation will hold you accountable for.

You move your ship through space with your joystick until you reach a planet, thereby conquering it. You can plant nuclear charges in the path of the enemy Clone Robot Ships. You can also protect yourself by turning on your shields, but you earn fewer points if you do. Another way to elude the enemy is to venture past the galactic fringe and re-enter the galaxy from the other side.

The more skilled you become at conquering a galaxy, the tougher the challenge you face. In the first galaxy, you must dodge only one Clone Robot Ship. But you face more enemy ships as you enter additional galaxies. You have only one life for your mission, but you can enter any number of galaxies! Your mission ends when an enemy ship destroys you or when your ship explodes from a nuke.

This real-time, fast-paced game offers realistic sounds and colorful displays. Other features of SPACE CHASE are options for number of nuclear charges and whether to use protective shields, intelligent pursuit of Clones, and scoring based on your selected strategy and your skill. You and your friends can compete in three different ways, because SPACE CHASE keeps track of three different scores — the most points earned, the most planets taken, and the most galaxies conquered.

The author invites written questions and comments.

REVIEW COMMENTS
You can't steer your ship as accurately as you'd like, so hitting a planet is hard when you're close to it.

SPACE CHASE is a little slow, but not enough to keep you from enjoying it. It has good sound effects.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
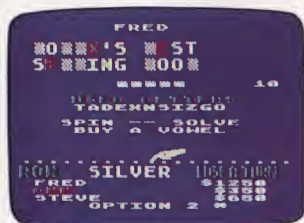One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10088
Diskette (810)	24K	$22.95	APX-20088

THE MIDAS TOUCH
by Duane Bolster

Recommended for ages 8 and up/Written in BASIC

Guess a phrase before time runs out

Put your worries aside and get ready for a challenging word game. THE MIDAS TOUCH won't turn everything to gold, but it will provide hours of fun, competition, and *thinking*.

Before the competition begins, you choose the number of players between one and four, kind of game, time limit for choosing letters, and level of difficulty. In game 1, you fill in blanks on the upper third of the screen. In the more difficult game 2, you fill in the blanks and then try to guess the correct answer to the phrase.

At each turn you have three choices. You can win the chance to choose a consonant by spinning a roulette wheel of words. To spin the wheel, press any number key between 1 and 9 before the timer counts down one-half of your chosen time limit. The words FREE SPIN, LOSE A TURN, LOSE TOUCH, GOLD, SILVER, OIL and ROCK scroll in single file across the lower third of the screen. Depending on where the scrolling stops, you either win a free spin token (usable at any time), choose a consonant (when you stop on a mineral), or lose all your points (when you lose your touch). You have your full time limit to choose a consonant. If you're successful, the letter turns into the mineral. The program computes the dollar value of the consonant, according to the mineral, and adds that amount to your score, which displays at the bottom of the screen. If the letter doesn't exist in the phrase, your turn ends. Or, you can choose to buy a vowel. If you guess a correct vowel, you win points. An incorrect vowel guess ends your turn. Or, you can type the solution. A correct guess wins you the game. An incorrect guess eliminates you from this round of play. The winner keeps his winnings while the other players' scores return to zero. At the end of a set of three games, each player's total score displays.

The author invites comments by telephone and mail.

REVIEW COMMENTS
MIDAS TOUCH is a fun and challenging word game.

The user manual is GOOD.

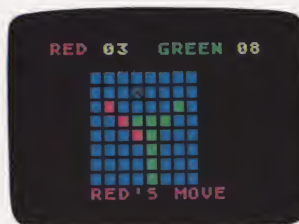### REQUIRES
ATARI BASIC Language Cartridge   **PAL**

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$15.95	APX-10115
Diskette (810)	32K	$15.95	APX-20115

REVERSI II
by Russell Segal

Recommended for ages 6 and up/Written in machine language

Outflank your opponent's squares on two sides

REVERSI II is a two-player strategy game playable on several levels. The object is to outflank your opponent's squares on two sides — vertically, horizontally, or diagonally — to capture them. You win if you have more points than your opponent when the last square on the grid is filled. Often a substantial lead can vanish with one strategically placed marker. One player can compete against another player, using one or two Joystick Controllers, or one player can compete against the computer at three different levels. At the easiest level, the computer always takes the most pieces possible on a move. At the intermediate level, it studies not only its possible moves but your resulting countermoves, thereby playing a good defense. At the highest level, the computer considers its moves, your responses, and its next move; it also judges the value of each square, since some are considered more valuable than others.

Another option offers an unusual feature — you can watch as the computer figures out its next move (using the highest level of strategy). On its turn, the computer displays the number of squares to be gained for any legal move and the value of each square after considering the next few moves. Then, after adding the weighting of this value to each square, the computer makes its move.

The author invites written questions and comments.

REVIEW COMMENTS
The computer's quick response makes the game fun to play. Because this is a much better program than our original REVERSI, it replaces the original.

The computer is a challenging opponent.

The option showing the computer's thought processes isn't very useful.

The user manual is VERY GOOD.

REQUIRES
One ATARI Joystick Controller   **PAL**
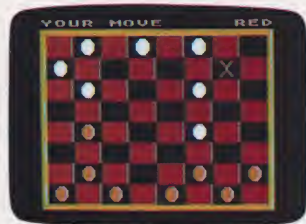
OPTIONAL
A second ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10077
Diskette (810)	24K	$22.95	APX-20077

CHECKER KING
by William H. Northrup

Recommended for ages 7 and up/Written in machine language

Computerized checkers for 1-2 players

Are your checkers opponents too predictable? Do you need a *real* challenger, the kind who thinks ahead, and can't be double jumped? Then turn on CHECKER KING, the computerized checkers game.

Once CHECKER KING loads automatically into computer memory, a playing board displays on the screen. You then choose to play against either the computer or another person. If you play against the computer, you choose the level of difficulty. Your choice determines CHECKER KING's intelligence. Depending on the level, the program will think ahead before taking its turn. Using a Joystick Controller, you position the movable cursor on a checker and press the joystick button. Then you move the cursor to the desired new spot and press the button again. The program won't let you make illegal moves and you have to jump your opponent's checkers, if possible. You can also set up the checkers to practice specific strategies.

The game ends when only one color of checker remains on the checkerboard. Players keep track of their own successes and can choose to play the same game again or change the level and play against a new challenger.

REVIEW COMMENTS
The display looks just like a checkerboard. CHECKER KING is a challenging opponent at all levels of play.

The user manual is GOOD.

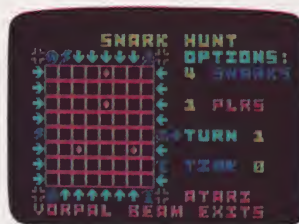### REQUIRES
One ATARI Joystick Controller per player   **PAL**

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10129
Diskette (810)	16K	$22.95	APX-20129

SNARK HUNT
by Jeff Johannigman

Recommended for ages 8 and up/Written in BASIC

1−8 players shoot vorpal beams to find the hidden snarks

Your mission: find the snarks hidden inside a mysterious snark box. Your clues: vorpal beams you fire into the box, which are affected by the snarks inside. Only your logic will help you find the errant snarks.

You search for snarks by shooting vorpal beams into a grid. To shoot a beam you move a marker with your Joystick Controller to one of the arrows bordering the grid and press the red joystick button. The path of the vorpal beam gives you clues to the snarks' whereabouts. As a vorpal beam moves through the box, it either reflects off a nearby snark in a known pattern, hits a snark directly and is absorbed by it, or exits from the box directly opposite the entry point. Continue shooting vorpal beams and deciphering their movements to track down the snarks. When you think you know where all the snarks are hidden, you mark their locations. SNARK HUNT then reveals where the snarks are and computes your final score.

One to eight players can enjoy this game played completely with one joystick. The number of snarks hidden determines the difficulty of your task. Up to four snarks creates a moderately difficult problem, five or six is tough, and seven to nine may make a complete solution nearly impossible. Any player can hide the snarks or the computer can hide them for you. A time limit option adds to the pressure. Don't give up! Keep on playing to increase your skill, better your score, and multiply your fun.

The author invites comments by telephone and mail.

REVIEW COMMENTS
SNARK HUNT taxes your logic, especially at higher levels. The use of the joystick, color, and graphics is very good. The game is an excellent metaphor of x-ray defraction.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10154
Diskette (810)	24K	$22.95	APX-20154

BASIC ADVENTURES

Adventures are maze games in which you're given descriptions of your current surroundings. These games use text only — no sound, motion, color, or graphics. Each version places you in a different setting and assigns you a different goal, such as escaping from an evil wizard or finding a treasure. You move around by entering one-letter directional commands like "U" for "up." In your meanderings, you encounter objects to help you accomplish your task or to protect you. If you're stumped, you can ask for hints. In addition, each version has secret words, which can effect wondrous results. All the user manuals are GOOD.

WIZARD'S GOLD

Recommended for preteenagers – adults/Written in BASIC

Find a hidden bar of gold

You're in another magical castle, but this time your task is to find a hidden bar of gold and return it to its rightful place.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20020

SULTAN'S PALACE
by Dennis Koble

Recommended for adults/Written in BASIC

Rescue the sheik's daughter

The notorious Sultan Abdul has abducted the sheik's daughter. Gallantly, you offer to rescue the princess from Abdul's pleasure palace. Your will power will be tested if you wander into certain of the Sultan's special rooms. This version is for adults and mature teenagers.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$15.95	APX-20025

SLEAZY ADVENTURE
by Bob Smith

Recommended for teenagers – adults/Written in BASIC

Sail a boat home from Thailand

Your friend has purchased a sailboat, currently moored in Thailand. You volunteer to sail it home for her, thinking you can use it to import contraband. Of course, the more valuables you take, the greater the risks you face.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$15.95	APX-20021

ALIEN EGG
by Robert Zdybel

Recommended for preteenagers – adults/Written in BASIC

Return the specimen to the spaceship

You awake from a deep sleep to find yourself the only one left aboard your spaceship. To complete the mission alone, you must suit up, exit the spacecraft, capture a specimen of the inhabitants (an alien egg), and return it to the ship's lab for analysis.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20022

CHINESE PUZZLE
by Dennis Koble

Recommended for teenagers – adults/Written in BASIC

Escape a maze of colored rooms

This one is for jigsaw puzzle fans. In this diabolical version, you find yourself locked in a suite of rooms from which you try desperately to escape. Unlike most Adventures, the rooms hold no helpful hints.

REQUIRES
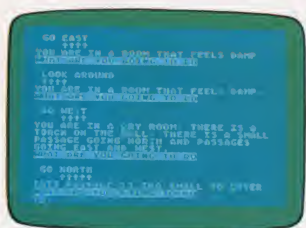ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20023

Entertainment

WIZARD'S REVENGE
by Max Manowski

Recommended for preteenagers-adults/Written in BASIC

**Escape the wizard
—if you can**

As a non-believer, you casually make a deprecating remark about wizard believers. Next thing you know, you're transported to a strange and hostile land with nothing but the clothes on your back. It's wizard country and you'd better high tail it out of there! However, that's easier said than done, as you'll soon discover.

This version of Adventure accepts free form commands and it contains some randomness from session to session. It's full of traps. Even using the HELP command can get you into trouble.

REVIEW COMMENTS
Although a typical Adventure, this one contains some sounds and it has a chatty approach. Be prepared to die many times before you figure out how to avoid all the traps.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20054

GRIDIRON GLORY
by Mike Drury and Bob Graves

Recommended for ages 12 and up/Written in BASIC

NEW

**Coach your favorite football
team to victory**

Football is as American as Mom's apple pie. Kids grow up playing in Pop Warner leagues and adults spend inordinate hours watching football games. For those who can't get enough, we give you GRIDIRON GLORY, a two-player, professional football simulation played from a coach's perspective.

Using a combination of keyboard and Joystick Controller commands, you and your opponent coach any of the twenty-eight professional football teams. Each team is programmed with a different profile, based on more than thirty statistics, such as punting average and field goal accuracy. You have eight-minute quarters to outcoach and outscore your opponent. A 25-second clock ensures a fast-paced, exciting, and often nerve-wracking game by forcing each coach to call plays quickly.

The playing field displays your position and movement of the ball after you call your plays. The scoreboard displays yards gained rushing and passing, total first downs, current down, yards to go, time remaining, and time-outs left. By careful play selection on defense and offense, you can experience the feeling of GRIDIRON GLORY!

The authors invite questions and comments by mail and telephone.

REVIEW COMMENTS
Although the animation and sound aren't exceptional, the programmed personalities of the teams and the game strategy are outstanding.

The user manual is VERY GOOD. It's well illustrated and contains useful information for coaching strategy.

REQUIRES
ATARI BASIC Language Cartridge
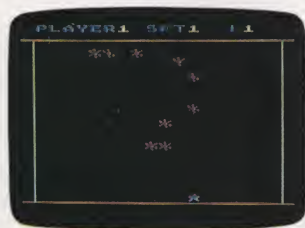A set of ATARI Joystick Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20188

JAX-O
by John Ortiz

Recommended for ages 7 and up/Written in BASIC

Computerized jacks for 1-4 players

"Jacks" players, it's time to trade your chalk circle for a television screen. The game is the same — only the face has changed. Using your Joystick Controller, you toss a ball onto a playing field and then race to pick up the jacks before the ball bounces.

One to four players can play JAX-O. Each player chooses his own level of difficulty before the game starts. Different levels can exist in the same competition. This choice includes the size of the playing field and ball speed. The game has seven levels and will proceed through each level unless you choose to "hold" and replay games on the same level.

Once the game starts, ten jacks appear on a square playing field. The player, set, and level number display at the top of your screen. Your player looks like a hand holding a ball and moves when you manipulate your joystick. Pressing the joystick button throws the ball onto the field. The player scurries about trying to pick up a jack and catch the ball before it bounces. Clear the field and you move into set two. Now you pick up two jacks at a time until you clear the square. Continue through the sets picking up threes, fours, and so on, up to tens. Your turn ends when your attempt to pick up the jacks fails.

The game starts over once you complete the seventh level. In a one-player game, you try to master different levels of difficulty. In a multiplayer game, you race to be the first to complete all seven levels.

The author invites written questions and comments.

REVIEW COMMENTS
This fun, challenging game has good graphics. You must be quite agile with your joystick to get the sevens, eights, nines, and tens.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10121
Diskette (810)	24K	$15.95	APX-20121

RABBOTZ, REV. 1.1*
Jeff Johannigman

Recommended for ages 10 and up/Written in BASIC

Zap the Rabbotz before they reproduce

Want a truly hare-raising experience? Need something to keep you hopping? You say you're already feeling a little jumpy? Then you're definitely ready for RABBOTZ, a one- or two-player game requiring speed and dexterity.

Once you choose the initial level of your game, you'll see your screen enclosed by a picket fence. The player or players appear as human beings along with a number of jumping Rabbotz, the ammo shack, and Coney Island — the entrance to the Rabbit Transit System. You move your player using a Joystick Controller. Rabbotz reproduce on the playing field by "splitting hares." Although Rabbot reproduction happens randomly, no more than two dozen Rabbotz appear on the field at one time.

You accrue points by either sabotaging Rabbotz, catching a bonus ball, or clearing the playing field of Rabbotz to complete a level. The Rabbotz move in unexpected directions and speed. Both you and the Rabbotz can enter Coney Island and reappear anywhere on the screen. Press the joystick button to plant land mines in the Rabbotz' path. If you run out of mines, move your player over to the ammo shack for more mines. If a Rabbot steps on a mine, you win points. If you run into a mine or a Rabbot, you lose one round of a three-round set. If you clear the playing field of all Rabbotz, you advance to the next level and battle one more Rabbot than the previous level with one less land mine at your disposal. You can win bonus rounds by making it to higher levels. If you catch the smiling bonus ball, which appears at random times and places on the screen, you win points. Revision 1.1 refines the sounds and motions.

The game keeps track of your score during each set. At the end of the game, all scores display. The highest score this session also displays.

The author invites comments by mail and telephone.

REVIEW COMMENTS
The game is clever and entertaining. Character graphics make the action a bit jerky and slow. It's frustrating to have a Rabbot catch you by jumping two spaces diagonally when you can jump only one.

The user manual is VERY GOOD.

REQUIRES
ATARI Basic Language Cartridge
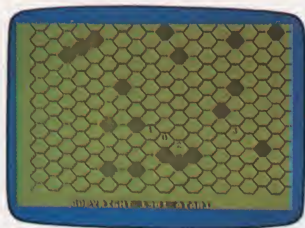One ATARI Joystick Controller per player

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10119
Diskette (810)	24K	$22.95	APX-20119

CENTURION
by Robert Zdybel

Recommended for teenagers-adults/Written in BASIC

Destroy the barbarians in this real-time war game

Here's a real-time war game in which you are a Roman centurion assigned to destroy ten hordes of barbarians before they destroy your ten legions. Your legions occupy positions in an 11-by-18 grid of hexagons. But you don't know the locations of the enemy units until one of your units nears an enemy unit; then that unit displays in its hexagon. You move your legions by issuing a series of directional commands. After entering your commands for a unit, you go on to move other units while the program carries out your commands. It also controls the enemy's moves. The barbarians are intent on wiping out your units! Thus, you constantly need to scan the grid for enemy movement and then recall your units to revise your strategy.

CENTURION has ten levels of difficulty to accommodate novice and experienced warriors alike. The high levels allot barbarians greater strength and give you less time to plan your moves. If you vanquish the barbarians, the Roman Senate awards you silver pieces commensurate with your victory.

REVIEW COMMENTS
This game calls for quick thinking and constant checking of both the graphic and the data displays. The displays do a commendable job of clearly tracking the large amount of information and number of movements involved in playing CENTURION.

The game's human interface is weak. For example, it can become confused if the user makes a mistake, and it's also slow at times.

The user manual is VERY GOOD.
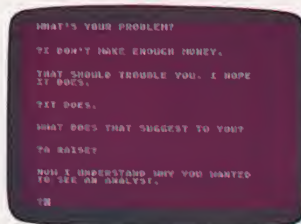
REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10016
Diskette (810)	24K	$15.95	APX-20016

TERRY
by Ingrid Langevin

Recommended for ages 10 and up/Written in BASIC and machine language

Converse with your very own tongue-in-cheek analyst

Your guests languidly dunk the chips in the dip. Their eyes glaze over in boredom. Only their hands are active . . . stifling yawns. The awkward conversational pauses stretch out interminably. Your party is going down the tubes. It's time to bring in TERRY! Not only can she breathe life back into your party, but she can even help you and your guests figure out why the party is bombing, if you're curious to know the reason. Granted, TERRY can be sarcastic at times, and sometimes TERRY's comments make sense only to TERRY. But as analysts go, she's cheap and she's always available. Besides, how else could you save both your party and your composure? (P. S. TERRY is also a good companion when you're all alone.)

TERRY is your very own analyst. Depending on your mood, you can engage her in light conversation, or you can reveal your innermost feelings. While she doesn't promise to clear up all your problems, she will keep your sessions in the strictest confidence, so feel free to reveal all. And she's very easy to use. You can start conversing as soon as she automatically loads into computer memory. You talk to TERRY via the keyboard, and she displays her responses on your screen. She can last as long as you can — long after your last guest has departed!

REVIEW COMMENTS
TERRY is a lightweight version of the artificial intelligence programs designed to imitate psychotherapists. However, TERRY doesn't pretend to be as smart or as probing. She favors, instead, rollicking repartee.

Some of TERRY's responses are a little odd!

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	32K	$15.95	APX-10047
Diskette (810)	32K	$15.95	APX-20047

DOMINATION
by Alan M. Newman

Recommended for ages 12 and up/Written in BASIC

A three-stage strategy game of superpowers

Here's a game where greed, cunning and ruthlessness can work to your advantage. Of course, judicious planning, quick reflexes, and some occasional diplomacy also help. In DOMINATION, between one and five players compete for power via economic means and nuclear or conventional warfare. You must make decisions quickly, exercise skillful hand-eye coordination, outguess your opponents, and cope with random events. You decide the length of the game by setting the number of years you want to cycle through. A cycle consists of three phases for each player. In the Nuclear Conflict phase, you can declare war against any opponent. Then you try to outguess your enemy during seven missile launches. In the Asset phase, you buy, sell, and reallocate assets to prepare for the final phase. In the Domination phase, you choose a country to fight or to try a little diplomacy on — either way, you're after its assets. Should you declare war, you then allocate your armies and personally shoot the cannons. When you prevail, all the country's assets transfer to you; when you lose, your assets diminish according to how heavily you committed yourself. Winner is the richest superpower at the end of the specified time span.

The author invites written questions and comments.

REVIEW COMMENTS
DOMINATION is like three games in one. It's especially fun with several players.

The Paddle Controller aspects of the game could use some finer tuning.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One set of ATARI Paddle Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10041
Diskette (810)	32K	$22.95	APX-20041

MEMORY MATCH
by Bruce Frumker

Recommended for ages 6 and up/Written in BASIC

Match pairs of hidden objects

Drat! Where did I see that other heart? Was it "sun" or "son" in box 39? Was that flag in box 17 flying leftward or right-ward? "What?" you ask. These are typical comments you'll hear from MEMORY MATCH players. Designed for one to four players, this is a challenging version of the popular memory game requiring players to match pairs of hidden objects. MEMORY MATCH contains 42 numbered boxes hiding 21 matching pairs. You may choose from four kinds of memory challenges. You can select pictures, such as airplanes, boats, houses, space creatures, and rabbits. Or, you can choose the ATARI Computer graphic symbols, which can differ, for example, in whether they're facing left or right, up, down, or diagonally, or are in normal or inverse video mode. You can also choose single letters. Or you pick three-letter words, which pose yet another memory challenge since many of these words rhyme or sound alike, such as "two" and "too," "sit" and "hit," and "hat" and "hot." You enter your pair of number guesses either via the keyboard or with a Joy-stick Controller. MEMORY MATCH is a game that will interest and challenge all ages.

The author invites comments and questions by telephone and mail.

REVIEW COMMENTS
This is a good implementation of the classic game. The graphics symbol option is especially challenging.

Designed to avoid distraction, this game isn't visually stunning, but it has all the right features for a game of this kind.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10070
Diskette (810)	24K	$22.95	APX-20070

System Software

SCREEN DUMP UTILITY

Recommended for programmers/Written in machine language

Print copies of any screen display

These three programs let you print copies of screen displays. You can copy text to any ATARI printer or equivalent printer. You can copy text and graphics characters **only** to an ATARI 822 Thermal Printer or a Centronics 739 Graphics Printer. An AUTORUN.SYS file automatically loads a screen dump program into memory. You then enter or load in an applications program. Whenever you want a printed copy of a display screen, you simply type CONTROL-P. You can change several of the graphics screen dump programs' parameters, including increasing the size or proportion of the printed image and printing black on white or white on black. You can also call these programs from your applications programs with a USR function.

REVIEW COMMENTS

The minimum-scale dump to an ATARI 822 Thermal Printer occurs as two passes, the first pass printing the leftmost two-thirds of the screen and the second pass printing the remaining third underneath. The procedure takes about 15 minutes. You then cut and tape the strips together. The print quality on this printer isn't the best, but it's usable.

These programs install themselves below user memory at boot time, moving the lower memory boundary up. Therefore, programs in machine language that rely on certain absolute memory locations being available might not work with these screen dump programs. Also, programs using player missile graphics must have been designed to run with this program.

The user manual is GOOD.
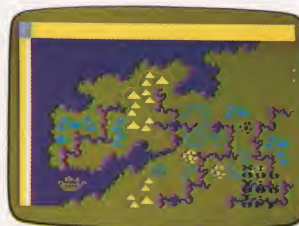
REQUIRES
Printer (see program description)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20045

MAPMAKER
by Stephen W. Hall

Recommended for ages 13 and up/Written in BASIC and machine language
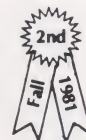
Create multiscreen, fine-scrolled map displays

Were you impressed by the beautiful map used in Chris Crawford's EASTERN FRONT? Would you like to create maps as large and detailed as his? Whether you design computerized simulation games or are simply interested in getting the most from your ATARI Home Computer, you'll find MAPMAKER a great programming tool. This easy-to-use utility can help you create multiscreen displays that capitalize on the ATARI Computer's outstanding multicolor, fine-scrolled redefined character sets. The large display that can fit in a small amount of memory is truly impressive. On systems with at least 40K of memory, MAPMAKER makes up to 8K available for displays comprising as many as 34 screens! On a system with 32K of memory, 4K is available for screen displays of up to 17 screens.

To create a map with MAPMAKER, you first define the dimensions of the total display area, and then enter characters from the computer keyboard. MAPMAKER acts as an easel upon which you can try out different combinations of shapes by displaying them on the screen. The program's fine scrolling feature allows smooth movement from one part of your map to another using either a Joystick Controller or the directional arrow keys on the computer keyboard.

MAPMAKER comes with an all-purpose character set of map elements, which are illustrated by the sample eight-screen map included on the diskette. However, you can use a separate character set editor to create your own mapping characters and then produce an infinite variety of displays with MAPMAKER. A compatible editor is INSTEDIT, available through APX. Using graphics mode 2, MAPMAKER supports four character colors, plus a background color, and the package contains an easy-to-use facility for changing the playfield color registers. When you complete a map, the program saves your file on diskette.

REVIEW COMMENTS

Chris Crawford is a user of MAPMAKER. This program is easy to use, but be prepared to spend several sessions building your map. MAPMAKER uses page 6 of memory and can't be used with another program occupying this area.

The user manual is EXCELLENT. It contains detailed descriptions of redefined character techniques, and the fine scrolling routine is well documented.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller
INSTEDIT (APX-10060 or APX-20060) or other compatible character set editor

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$22.95	APX-20144

DEEP BLUE C COMPILER
by John H. Palevich

Recommended for programmers familiar with C/Written in C

An implementation of the SMALL C language

"C" is a general-purpose programming language designed to fill the gap between BASIC and assembly language. Created by system programmers, it's more powerful and faster than BASIC, yet it's clearer and less error-prone than assembly language. Features such as pointers, recursive functions, and high-level control structures make complex software systems easy to design, implement, and maintain in C. Additionally, C is the de facto systems programming language of the new generation of work station computers. Unlike assembly language programs, C programs are transportable to other computers with minor modifications.

The DEEP BLUE C COMPILER helps you create large C programs—ones taking more than a day to write and containing more than a hundred lines of code—written for your ATARI Home Computer. Among the features DEEP BLUE C supports are:

- char, int, and pointer data types
- single dimension arrays
- unary operators: +,−,*,&,++,--,!,$-(tilde)
- binary operators: +,−,*,/,%,I,^,&,==,!=,<,<=,
  >,>=,<<,>>,<op>=,&&,II,?:,comma
- statements: if, else, while, break, continue, return
- #define and #include compiler directives
- relocating linker

The author invites written questions and comments.

REVIEW COMMENTS
The author has included a library of commands similar to BASIC commands, which eases the transition to C. Going from editor to compiler to linker is slow, but the potential for programmers is great.

The user manual is VERY GOOD; however, you'll also need a C programming manual if you're not familiar with C.

REQUIRES
ATARI Program-Text Editor™ or other non-line oriented text editor

OPTIONAL
ATARI Macro Assembler
ATARI Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	48K	$39.95	APX-20166

DEEP BLUE SECRETS
by John H. Palevich

Recommended for advanced C programmers/Written in C

Adapt the DEEP BLUE C COMPILER to fit your own needs.

With DEEP BLUE SECRETS—the source code for DEEP BLUE C—you can maintain, modify, and extend the C language for your own programming applications.

DEEP BLUE C consists of the object code for a compiler, a linker, and an interpreter. The compiler, which converts C source text into compiled C code, is an adaptation of Ron Cain's public domain Small-C Compiler. The linker, which combines several compiled C code files into a single executable object file, and the interpreter, which executes the object file, are original works required to implement C on the 6502 microprocessor used in ATARI Home Computers.

The DEEP BLUE SECRETS diskette contains the source code for the compiler and linker and the source text for the interpreter; the accompanying manual documents these programs.

REVIEW COMMENTS
With the source code to C, advanced C programmers can create their own subset of the small C compiler. The documentation covers all aspects of this useful program.

REQUIRES
DEEP BLUE C COMPILER (APX-20166)
ATARI Macro Assembler* and Program-Text Editor* (CX8121)
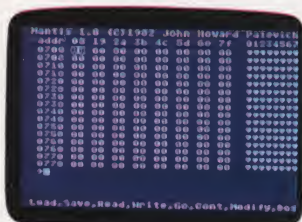
ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	48K	$39.95	APX-20179

*ATARI Macro Assembler** and **Program-Text Editor** are trademarks of Atari, Inc.

MANTIS
by John Palevich

Recommended for assembly language programmers/Written in machine language

Develop assembler cassettes on disk-based systems

Many assembly-language programmers have disk-based ATARI Home Computers with a full complement of memory for developing programs. But to broaden the potential market for their work, they're interested in creating programs for cassette-based ATARI Computers with 16K of memory. Until MANTIS BOOT TAPE DEVELOPMENT SYSTEM (MANTIS) came along, developing such programs usually meant having to remove memory modules, unplug the disk drive, and make temporary cassette copies. No more. With MANTIS, you can assemble and debug machine-language tape programs on your disk-based system with all the memory your system normally contains. You use the ATARI 410 Program Recorder only after you've completely debugged your program.

MANTIS is a powerful debugging tool helpful throughout a program's development cycle. With MANTIS you can load and save DOS-2, binary-load files containing object code between diskette and computer memory; read and write machine-language tapes; examine and modify your programs in memory; and execute machine-language tapes in memory, simulating a 16K, cassette-based system and returning to MANTIS and DOS upon command. MANTIS works as follows. It saves DOS in high memory, simulates a 16K, cassette-based ATARI Computer for testing purposes, and then restores DOS for further development work. A full screen, three-format memory map and comprehensive set of memory editing commands let you modify your program interactively. Now you can easily read, write, and test machine-language, tape-based programs while taking advantage of the speed and power of your disk-based system!

The author invites written questions and comments.

REVIEW COMMENTS
MANTIS is a valuable debugging tool for cassette program developers. It can debug only *16K* tapes, not those requiring more memory to run.

The user manual is VERY GOOD.

REQUIRES
ATARI 410 Program Recorder

OPTIONAL
Assembler Editor Cartridge
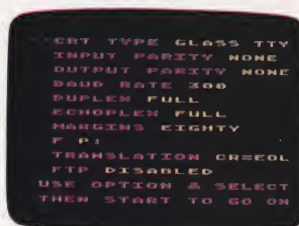ATARI Macro Assembler™ and Program-Text Editor™ (CX8121)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20143

CHAMELEON CRT TERMINAL EMULATOR
by John Howard Palevich

Recommended for ages 14 and up/Written in BASIC and machine language

Convert your computer into a Glass TTY, ADM-3, or VT-52 terminal

Convert your ATARI Computer into a computer terminal! For three terminal types, "Glass TTY," ADM-3A, and VT-52, CHAMELEON supports tabs, line feed, form feed, and a visual bell signal. For the ADM-3A and VT-52, it also supports cursor addressing and basic editing features. It doesn't support the special graphics character set of the VT-52 or some rarely used ADM-3A features.

CHAMELEON's major features are: (1) an 80-column, 24-line character display (displaying 40 columns at a time) with a lock cursor feature for automatic horizontal scrolling; (2) previous page buffer; (3) continuous transmission at baud rates of 75 to 4800 and non-continuous at 9600; (4) selectable input and output parity; (5) a BREAK signal; (6) the full ASCII standard character set; (7) program uploading and downloading capability between your computer and a time-sharing system and between two ATARI computers; and (8) the ability to dump the contents of the TV screen to a printer. (The fall edition of the catalog neglected to mention these last two features.) Assembly language programmers with a 32K disk system and the Assembler Editor Cartridge can define new terminal types with CHAMELEON (the diskette version includes the source code).

The author invites written questions and comments.

REVIEW COMMENTS
This is a versatile, well thought-out program. The wide screen emulation is great for large computer systems expecting an 80-column terminal. Your TV picture must be properly centered to handle the 40-column display. It has no autoreturn mode; the host computer must send a CR-LF signal.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
ATARI 830 Acoustic Modem or an RS-232C device
ATARI 850 Interface Module
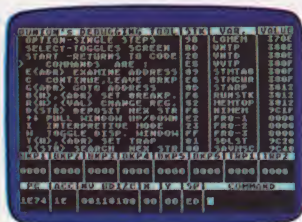
OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10058
Diskette (810)	24K	$22.95	APX-20058

DUNION'S DEBUGGING TOOL (DDT)
by Jim Dunion

Recommended for assembly language programmers/Written in machine language

A debugging tool for use with the ATARI Macro Assembler™

The features designed into the ATARI Home Computer make it unique among current microcomputers. However, getting at some of these features is done more efficiently in low-level assembly language programming than in high-level languages like BASIC and PILOT. Assembly language programmers can benefit greatly from adequate development tools. The ATARI Macro Assembler™ and Program-Text Editor™ is one such powerful programming tool, and now we have a companion piece, DUNION'S DEBUGGING TOOL (DDT), which is a debugging tool specifically designed for use with the Macro Assembler.

Most of the time, correcting a program bug isn't the central problem; finding it is. That's where DDT comes in. DDT operation centers around control of its display screen and around the ability to monitor and change easily the internal state of the machine. This feature works while also maintaining the user's screen display. The display is divided into six areas, each showing a different aspect of what's going on inside the computer at any instant. The areas are: (1) a register display showing the current contents of the 6502 processor registers; (2) a display window forming a window into the system memory address space; (3) a stack display showing the top fifteen items on the system stack; (4) a mini-symbol table showing the names and values of fifteen user-defined declared symbols; (5) a breakpoint table showing the settings of user-definable breakpoint and trap registers; and (6) a command window showing commands typed from the keyboard. Commands are available for changing the contents of registers and memory, examining areas of memory, and single-stepping the processor. You can assemble DDT along with your source code if you wish, and you can place DDT in memory according to what you want to work on. Example programs included in the package illustrate ways to set up and use DDT's many features.

The author invites written questions and comments.

REVIEW COMMENTS
For all levels of assembly language programmers, DDT is definitely worth learning to use.

The user manual is VERY GOOD.

REQUIRES
ATARI Macro Assembler™ and Program-Text Editor™ (CX8121)

OPTIONAL
ATARI BASIC Language Cartridge (for examples)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$39.95	APX-20150

System Software

DSEMBLER
by Volker Multhopp

Recommended for assembly language programmers/Written in BASIC and machine language

Study and debug assembler routines in ATARI BASIC programs

If you write machine language subroutines as part of ATARI BASIC programs, you know how cumbersome debugging your assembler routines can be. Here's a tool written in BASIC that's useful for studying and debugging 6502 machine language code. With DSEMBLER you can disassemble any of the valid 6502 machine code in memory and display or print the results in a five-field format: (1) the location of the disassembled instruction; (2) the hex value of each byte of the instruction; (3) if you labeled the location while debugging the code, the label name (i.e., not necessarily the label you assigned as you wrote the code); (4) the op-code for the instruction; and (5) any associated operand using standard 6502 format (if you labeled an operand address while debugging, the label name will appear instead of that address).

Using DSEMBLER, you can also: (1) convert integers between 0 and 65535 to hexadecimal and vice versa; (2) regenerate labels, rename existing labels, and remove an existing label (DSEMBLER can create as many as 254, two-to-eight character labels); (3) display or print a list of label values and their names; (4) store a file of labels to diskette or cassette and recall them; (5) load your machine code quickly into memory; (6) display "pages" of memory for quick scanning; (7) jump to a machine language subroutine with the 6502 X, Y, and A registers set as you wish; (8) search any part of memory for any specified byte sequence, using wild cards for byte values if you wish; and (9) write your own operation as an option on DSEMBLER's menu.

The author invites questions and comments by telephone.

REVIEW COMMENTS
DSEMBLER is a useful, easy-to-use debugging tool for programmers writing assembler routines to run with ATARI BASIC programs.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$22.95	APX-10065
Diskette (810)	24K	$22.95	APX-20065

ATARI PASCAL LANGUAGE SYSTEM

Recommended for advanced programmers familiar with Pascal/Written in Pascal and assembly language

ISO Pascal with many enhancements

Pascal is a structured-programming language suited for professional software developers, making it an excellent tool for developing and maintaining programs. ATARI Pascal is a multipass, pseudo-code compiler offering a flexible modular compilation scheme to permit easy transition from large, monolithic programming style to modular programming without extensive preplanning. This modular compilation scheme allows full access to procedures and variables in any module from any other module. Once the source program has been compiled, the Pascal Linker is used to bind individually compiled modules and their run-time libraries into an executable object program.

ATARI Pascal supports the International Standards Organization (ISO) draft standard (DPS/7185 as of 10/1/80), including variant records, sets, typed and text files, passing procedures and functions as parameters, GOTO out of a procedure, conformant arrays, and program parameters.

Although ATARI Pascal isn't completely compatible with UCSD Pascal™, both versions are written around a common core — Pascal as defined by Jensen and Wirth. The differences aren't as significant as, for example, the differences in various BASICs.

ATARI Pascal contains many enhancements, including:

- additional predefined scalars: BYTE, WORD, STRING
- additional operators on integers
- null strings
- ELSE on CASE statement
- external procedures
- absolute variables
- chaining to another program
- modular compilation

It also contains the following built-in procedures and functions:

- graphic, sound, and controller (Joystick and Paddle) functions comparable to those available in ATARI BASIC
- real and transcendental definitions
- move and fill procedures
- bit and byte manipulations ·
- file manipulation procedures
- heap management aids
- string manipulation
- address and sizeof functions

ATARI Pascal supports sequential and direct access files, text files, and block I/O. It has the same file handling capabilities as the ATARI Disk Operating System 2.0S.

Run-time error handling includes checks for divide by zero, heap overflow, string overflow, and range checking, as well as support for user-supplied routines.

ATARI Pascal has been tested, but not exhaustively. The ISO Test Suite has been successfully executed. Although errors are detected, the results might not be the same as in the ISO Test Suite. Testers agreed that ATARI Pascal is an excellent "second generation" product suited for software development. However, this product is seriously restricted owing to memory limitations and diskette capacity and performance.

As with other APX programs, ATARI does not support this product after the sale. However, we'll study all documented problems we receive for future revisions.

REVIEW COMMENTS

ATARI Pascal offers all the major features of Pascal. The product is for software developers with patience and persistence. Compilation is time consuming and is restricted to *two* (and only two) disk drives. However, one drive can be used after compilation to run the object program. Before buying ATARI Pascal, consider carefully its limited testing, support, and lack of tutorial information.

The user manual is GOOD for advanced Pascal programmers, but it's a reference only, not a tutorial. It describes ATARI Pascal's unique extensions, but it has very few examples.

REQUIRES
TWO ATARI 810 Disk Drives
ATARI Program-Text Editor (APX-20075)

OPTIONAL
ATARI 825 80-Column Printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	48K	$49.95	APX-20102

EXTENDED fig-FORTH, REV. 2

by Patrick Mullarky

Recommended for advanced programmers/Written in machine language

Full implementation of standard fig-FORTH, with more definitions

For several reasons, the FORTH language has been gaining in popularity in recent years. Many advanced programmers find that FORTH is a good development tool for applications requiring high speed and low memory consumption, such as process control, systems software, and games. For these kinds of jobs, a FORTH program often runs 10 to 100 times faster than does a BASIC program to perform the same function. Because FORTH wasn't designed for floating point calculations (although they're possible and this version supports them), it isn't normally used for business applications, number crunching, and the like. However, it fills the gap nicely between BASIC and machine language programming. On the one hand, programming in FORTH is usually easier than programming in machine language, but FORTH programs don't run as fast as machine language programs do. On the other hand, programming in FORTH is sometimes slower than programming in BASIC, but FORTH programs run faster than BASIC programs do.

EXTENDED fig-FORTH is a full implementation of the standard FORTH as defined in the Forth Interest Group (fig) Implementation Guide. It roughly follows the 6502 Rev. 1.1 FORTH sources as supplied by the Forth Interest Group (P. O. Box 1105, San Carlos, CA 94070). Many changes were incorporated in adapting the sources to the ATARI Home Computer, but the definitions, operation, and user interfaces remain as described in the guide.

This version adds many definitions, including extended double-precision words, such as 2DUP, 2SWAP, D@, and D!. Also included in this version are the standard FORTH Editor, a complete Assembler for the 6502, a set of the ATARI Computer's Color/Graphic definitions, and a set of the ATARI Computer's floating-point definitions. A new definition, SAVE, lets you make a self-booting image of FORTH on a diskette and will include any new definitions you add. This feature lets you produce applications packages in volume easily. This version doesn't implement the definitions DLIST, MON, and TASK. It does implement the complete set of ATARI Computer Screen-Editor capabilities, making editing and changing FORTH programs simple and straightforward.

You should be familiar with FORTH to use EXTENDED fig-FORTH. Beginning FORTH programmers might want to use the primer, *Starting FORTH*, by Leo Brodie (Prentice-Hall) along with EXTENDED fig-FORTH. Screens are included in the diskette version for this purpose in Revision 2 (along with some bug fixes).

The cassette version is a subset of the diskette version. It doesn't contain the EDITOR, OS, or COLOR/GRAPHICS screens. However, the manual lists all the screens, so cassette users can type in the screens they want to use that aren't included on the cassette. The cassette version is primarily for use as an introduction to FORTH, and not as a software development system.

The author invites questions and comments by telephone and mail.

REVIEW COMMENTS

This version does a good job of emulating the fig-FORTH model.

The toggling printer command is very convenient in that printing doesn't require special commands.

Upon booting, all error messages are in force. They're nicely formatted and easy to read.

This FORTH includes convenient extensions to allow for diskette backup. It also includes the DECOMP (decompile) word in the DEBUG package; DECOMP is a fairly sophisticated function not often found on microcomputer versions of FORTH.

It supports the RS232 port I/O. Two sound commands are included.

The user manual is GOOD, but it assumes familiarity with FORTH.

REQUIRES
No required accessories

OPTIONAL
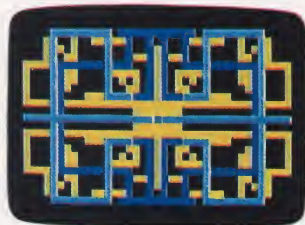All ATARI peripherals and accessories

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$39.95	APX-10029
Diskette (810)	24K	$39.95	APX-20029

fun-FORTH
by Joel Gluck

*Recommended for EXTENDED fig-FORTH programmers/
Written in fig-FORTH*

**Sound and graphics
commands for use with
EXTENDED fig-FORTH**

Fun-FORTH is a valuable set of programming tools to use with
another APX program, EXTENDED fig-FORTH. It's especially
useful for writing games. The 41 screens of FORTH words
(commands) included in fun-FORTH facilitate using advanced
sound generation, simple turtle graphics, the Joystick and
Paddle Controllers, and the yellow console keys and keyboard
in FORTH programs. Also included in this package are vari-
ous words for timekeeping, random number generation, crea-
tion of arrays, and recursion.

Fun-FORTH is clearly organized and designed so that you can
load in only the fun-FORTH commands you want to use. You
can create families of FORTH words for your specific pro-
gramming needs. Fun-FORTH not only gives you the pro-
gramming conveniences available in BASIC, but also provides
several new and advanced features.

The author invites written questions and comments.

REVIEW COMMENTS
A working knowledge of FORTH is necessary to use these
screens. Programmers interested in increasing their use of the
sound and graphics capabilities of ATARI Home Computers
will find fun-FORTH a very useful addition to EXTENDED
fig-FORTH. In addition to adding many new commands,
this extension forms the basis for a very nice program-
development package. The additional words are not only of
great use, but are excellent examples of good programming
technique for those trying to learn FORTH.

The user manual is detailed and EXCELLENT.

REQUIRES
EXTENDED fig-FORTH (APX-20029)

OPTIONAL
One ATARI Joystick Controller
One set of ATARI Paddle Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20146

FORTH TURTLE GRAPHICS PLUS
by William D. Volk

*Recommended for EXTENDED fig-FORTH programmers/
Written in FORTH*

**Turtle graphics for use with
EXTENDED fig-FORTH**

If you're a user of our EXTENDED fig-FORTH, you'll want to
investigate FORTH TURTLE GRAPHICS PLUS. This package
contains a group of FORTH words (functions) that adds the
standard turtle graphics of ATARI PILOT (CXL4018) to EX-
TENDED fig-FORTH. Using FORTH TURTLE GRAPHICS
PLUS, you can design graphic programs displayable in any
graphics mode and on any portion of the screen without
modifying your program.

Implemented in integer math, the package also includes a
normalized coordinate system, the ability to create windows
with clipped lines on any part of the screen display, the
trigonometric functions *SIN, *COS, and *TAN, and the
twelve graphics modes available with the new GTIA chip for
use in FORTH programs. Epson printer owners with GRAF-
TRAX will appreciate the graphics mode 8 screen dump util-
ity included in the package.

The author invites written questions and comments.

REVIEW COMMENTS
This package is an excellent addition to EXTENDED fig-
FORTH. Familiarity with FORTH is necessary.

The user manual is VERY GOOD.

REQUIRES
EXTENDED fig-FORTH (APX-20029)

OPTIONAL
Epson MX-80 or MX-100 printer with GRAFTRAX

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20157

PLAYER GENERATOR
by Paul G. Abell

Recommended for ages 12 and up/Written in BASIC

Create players, with storage and print features

You don't have to be a computer pro to create screen movement and animation for your games, educational programs, or business presentations. PLAYER GENERATOR saves you time and energy when you create players with your ATARI Home Computer.

Once the program loads automatically into computer memory, an 8 × 22-dot grid appears. You create a player by using your Joystick Controller to move a flashing cursor over the dots and pressing the trigger button when the cursor rests on the desired dot. You follow this procedure until you have your desired graphic. While you're designing, a replica of your player displays alongside the grid. You can create up to five players. The program lets you save your design and use it in your own program.

Using a series of program options, you can select one of fifteen background and player colors, erase the player and design grid, reverse background color and dots, alter luminance of the player, generate a random pattern, alter the size of a player, store a demonstration program of your new design to cassette or diskette, print player data, retrieve a design from a diskette, or save a design to a diskette. One key press cycles you through all the possibilities within each choice.

The author invites comments by mail or telephone.

REVIEW COMMENTS
Designing players is easy and straightforward with PLAYER GENERATOR. The keyboard is used very effectively in the design phase. The player movement routine is slow.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	24K	$15.95	APX-10117
Diskette (810)	32K	$15.95	APX-20117

T: A TEXT DISPLAY DEVICE
by Joseph J. Wrobel

Recommended for BASIC programmers/Written in machine language

Intermix text and graphics on the same line in any graphics mode

Remember your frustration when you tried to put all that text on the screen and found 40 characters cramping your style? What about the less-than-satisfactory results when you tried to label some graphs? T makes intermixing text and graphics on the same line not only possible but easy. You'll have more freedom and control over what you can put on a line with this autoloading, 510-byte routine than you have using the standard technique of doing display list modifications.

Rather than working through the display list feature (although T is compatible with a modified display list), T defines a new device, T:, and uses it like P: or any other input/output device. Printing to T: plots characters — text and graphics — to the screen, the character size depending on the current graphics mode. You use the standard ATARI BASIC I/O commands with this new device name (no PEEKs or POKEs), so you don't need to learn a different set of commands. T also has special operation XIO commands for setting left and right margins, choosing from three character widths (in half width, up to 80 characters can display on a line), altering the character base pointer for user-defined character sets, and offsetting text for printing subscripts, superscripts, or proportional spacing. You can use T with any of the standard BASIC and hardware graphics modes (both full and split screen), with as many colors as are normally available in each mode. In all modes, T prints the full ATASCII character set in both normal and inverse mode. The program supports random screen printing as well as sequential line printing.

The author invites written comments and questions.

REVIEW COMMENTS
T is a slick solution to mixing text and graphics modes on the same line. The 80-character display mode is really useful only on black-and-white monitors. You can obtain an 80-column mode only through your own programs.

The user manual is GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	8K	$22.95	APX-10067
Diskette (810)	16K	$22.95	APX-20067

INSTEDIT, REV. 1.1
by Sheldon Leemon

Recommended for programmers/Written in BASIC and machine language

A character set editor

INSTEDIT can help you take advantage of the advanced graphics capabilities of your ATARI Computer. You use a Joystick Controller to edit a character in an eight-by-eight matrix. INSTEDIT simultaneously displays the modified character in all six graphics modes. To experiment with combining characters, merging them to create larger objects, you can use INSTEDIT's memo pad mode. You can even create objects for use with the ATARI Computer's system of player missile graphics. In addition to point-by-point character editing, you can change the whole character at once. You can erase it, restore its original shape, invert letter and background color, copy the form of another letter, or shift the position of the character within the matrix. You can store a character set for further work. Once you're satisfied with a set, INSTEDIT can write all or part of your character data to a diskette file or to a cassette in the form of BASIC DATA statements, assembler source code using the .BYTE directive, or even an entire BASIC subroutine for incorporating your character set into a program. Revision 1.1 contains a minor change in the editing prompt.

The author invites written questions and comments.

REVIEW COMMENTS
INSTEDIT is the best character set editor we've seen.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10060
Diskette (810)	24K	$22.95	APX-20060

INSTEDIT (Microsoft BASIC Version)
by Sheldon Leemon

REQUIRES
ATARI Microsoft BASIC (CX8126)
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$22.95	APX-20113

MICROSOFT BASIC CROSS-REFERENCE UTILITY
by Fred Thorlin

Recommended for Microsoft BASIC programmers/Written in Microsoft BASIC

A variable tracer for ATARI Microsoft BASIC programs

Have I used this variable somewhere else? Does another statement branch to this one? How did I get to this statement? What caused the value of that variable to change? If I change this subroutine, what other code is affected? If you've programmed in BASIC, you've probably faced these kinds of questions. MICROSOFT BASIC CROSS-REFERENCE UTILITY (MXREF) can help give you the answers. This program development tool produces directories of variable usage and line number references within ATARI Microsoft BASIC programs.

MXREF requires your program to be stored on diskette in LIST format. After loading MXREF into computer memory, you answer prompts requesting the names of the file to be processed and the report file. MXREF then analyzes your program and issues a report to your designated output device. The report includes title, variable reference, and line number reference sections. The title section identifies the file analyzed and the value of the TIME$ field when the report was generated. The variable reference section lists all variables in alphabetical order; next to each is a list of all line numbers of statements referencing the variable. The line number reference section lists all line numbers that are referenced within statements; next to each entry is a list of all line numbers of statements referencing the indicated line.

The author invites written questions and comments.

REVIEW COMMENTS
This utility is a good program documentation and debugging aid.

The user manual is VERY GOOD.

REQUIRES
ATARI Microsoft BASIC (CX8126)

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	40K	$15.95	APX-20125

MUSIC PLAYER
by James Bayless

Recommended for programmers/Written in machine language

NEW

3rd Winter 1982

**A tool to use
ATARI MUSIC COMPOSER™
files with your programs**

Would you like an easy way to add music to your programs? Are you interested in writing programs that teach musical concepts while playing examples? These are but two of the ways you can take advantage of MUSIC PLAYER, a companion program to the ATARI MUSIC COMPOSER cartridge. With MUSIC PLAYER, you can incorporate into your programs music you create with MUSIC COMPOSER, and a big plus to MUSIC PLAYER is that the music can play independent of program operation. For example, you can play some background music to keep a user entertained while your program performs a lengthy operation. Or, you can create musical guessing games, having the music play in the background as a player picks an answer. You can even have the music play while you edit your programs.

MUSIC PLAYER uses the familiar commands OPEN, CLOSE, and PUT, just as if it were another ATARI input/output device. It works basically as follows. As part of your program, you include a routine to load the MUSIC COMPOSER song file. After the file loads, your program issues an OPEN command using "M:" (to specify MUSIC PLAYER) as the device code. Your program can then start and stop the music at any time by using the PUT command. MUSIC PLAYER automatically loads into your computer when you turn it on, so all you then have to do is RUN your program. The diskette contains a sample BASIC program using demonstration songs.

The author invites written questions and comments.

REVIEW COMMENTS
MUSIC PLAYER is usable with assembly language and with BASIC, C, Pilot, Pascal, and other languages that permit AUTORUN.SYS files and use OPEN, CLOSE, or equivalent statements.

The user manual is VERY GOOD.

REQUIRES
File(s) created with ATARI Music Composer (CXL4007)

OPTIONAL
ATARI BASIC Language Cartridge (for sample songs)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$22.95	APX-20181

INSOMNIA (A SOUND EDITOR), REV. 1.1
by Bob Fraser

Recommended for BASIC programmers/Written in BASIC and machine language
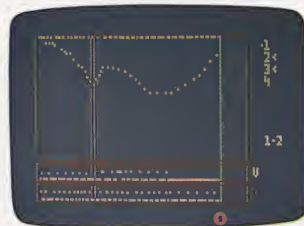
**Generate up to four-second
sounds with up to four
voices**

This sound editing package gives you an easy and enjoyable method for generating a complex (four-voice) sound or a few simple sounds lasting up to four seconds. You can install these sounds in your BASIC programs through a machine language subroutine included in INSOMNIA that lets your program run unimpeded by the sounds. Thus, your program isn't slowed down by its sounds, but it can turn these sounds on and off at will.

You create sounds by plotting points in three windows of a screen display: frequency, volume, and distortion. These parameters correspond to the last three parameters in the SOUND statement of ATARI BASIC. You select the sound parameters and plot your points using a Joystick Controller, a Paddle Controller, or both. Working with any of the ATARI Computer's four sound generators, you immediately hear the changed sound each time you plot a point. You can play your sound either continuously or once only, and you can isolate one voice for modification or you can combine voices to hear the overall effect. INSOMNIA also can produce very low and very high frequency sounds normally unattainable with conventional sound generating methods. You can save and recall sounds on diskette for further revision. Revision 1.1 corrects bugs in one of the demonstration programs.

REVIEW COMMENTS
This well-designed program is very useful for learning how changing one parameter effects the resulting sound. INSOMNIA supports all four voices, creates sounds as long as four seconds, and doesn't tie up machine time while generating the sound in your program. SOUND EDITOR (APX-10018 and APX-20018) supports only two of the four voice channels, creates sounds of one second or less, and uses machine time when generating the sound.

INSOMNIA can load four voices into RAM only once, when your program loads in. Thus, you're limited as to sound complexity or variability within a program.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller
One ATARI Paddle Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20073

System Software

DISK FIXER/LOAD 'N GO

Recommended for programmers/Written in BASIC and machine language

Utilities to salvage destroyed diskettes and to autoload ATARI BASIC programs

This diskette contains the two APX programs DISK FIXER (FIX) and LOAD 'N GO. FIX lets an advanced programmer get directly at several areas of a diskette, sometimes helping to recover some or all files from a "crashed" diskette. You can (1) display directory entries, (2) modify directory entries, (3) trace sector chains through a file, looking for the end of the file or for a bad sector, (4) check the allocation map, (5) modify sector links, and (6) edit actual sector data. FIX requires a detailed understanding of disk structure and is recommended for advanced systems programmers only.

LOAD 'N GO lets you automatically start a BASIC program whenever you turn on your computer. It's like custom-tailoring your computer to a single application, except you can custom tailor it to as many applications as you wish. To set up the automatic program execution, you run LOAD 'N GO once. LOAD 'N GO asks you for a RUN or LOAD command for the BASIC program you want to autoexecute. It then creates an AUTORUN.SYS file that automatically starts your program whenever you turn on your computer with the program diskette inserted in the first disk drive. LOAD 'N GO is very simple to use, and its applications are limited only by your imagination.

REVIEW COMMENTS

FIX has been invaluable on several occasions in salvaging a destroyed diskette. Styled after the ATARI DOS menu structure, it has a fairly good user interface. You can do more harm than good with FIX if you don't know what you're doing.

You can't use LOAD 'N GO with a diskette containing an AUTORUN.SYS file, since LOAD 'N GO will replace the file with its own AUTORUN.SYS file.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge (for LOAD 'N GO)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$29.95	APX-20189

SUPERSORT, REV. 3
by Bob Fraser

Recommended for intermediate-advanced BASIC programmers/Written in machine language

A high-speed sorting subroutine usable in BASIC programs

SUPERSORT is a high-speed sorting routine you call from your BASIC programs. It can sort 1,000 thirty-byte names in less than ten seconds and 1,000 one-byte items in less than two seconds! Depending on your computer's memory size, SUPERSORT can sort as many as 10,000 records. A record is limited to 256 characters. Any data field can be a sort key and SUPERSORT can sort on as many as 89 keys. SUPERSORT loads itself into RAM as an AUTORUN.SYS file when you boot a diskette containing SUPERSORT. You run your BASIC program as usual, storing in one long string the items you want sorted. You POKE in your record and key lengths and execute a USR function. SUPERSORT sorts the entire string in ascending order by your specified key(s). Your BASIC program then determines what is done to the sorted data.

Installing itself below BASIC at boot time, SUPERSORT uses page 6 in memory as a scratch pad and about 1000 bytes of RAM for itself. This program combines C. Hoare's QUICKSORT with a standard insertion sort. The algorithm is described in Donald Knuth's *Art of Computer Programming*, vol. 3, p. 114. The diskette has the assembler editor source code to allow you to modify the program to fit your needs.

REVIEW COMMENTS

This utility is designed for use only with BASIC. With some work, you can modify it for other uses. SUPERSORT does no error checking, so you must write your calling program carefully; otherwise, it will sort all of memory, including your program. Because it uses the AUTORUN.SYS feature, using the RS-232 ports of an ATARI 850 Interface Module at the same time you use SUPERSORT can be awkward.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
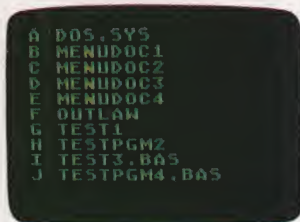ATARI Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20030

73

DISKMENU
by Al Harberg

Recommended for ages 8 and up/Written in BASIC

NEW
3rd Winter 1982

Load BASIC or machine-language programs with a single keystroke

DISKMENU will be a real time-saver for anyone who has programs that don't load automatically into computer memory. It gives you a quick and easy way to organize and use all those games and utilities you've been accumulating on various diskettes. With this automatically loaded program, you use a single keystroke to load into memory any BASIC program stored in SAVE format and any machine-language program in BINARY SAVE format (i.e., normally loaded using option L, Binary Load, on the DOS menu). DISKMENU can display and run as many as 47 programs on a diskette. You can also specify that a program just load into computer memory instead of both loading and running.

Setting up your program diskettes with DISKMENU is easy. You copy two programs from the DISKMENU diskette to each program diskette. From then on, you simply insert your program diskette into the disk drive and, after the list of programs on the diskette displays, you type the character next to the name of the program you want to load into memory. DISKMENU loads your program in a matter of seconds and you're on your way.

The author invites written questions and comments.

REVIEW COMMENTS
Everyone can benefit from having this program, but it should be particularly useful for new and young computer users, who aren't accustomed to typing BASIC commands or using DOS options. DISKMENU won't load all machine-language programs. For example, it can't handle programs that load into an area usually occupied by DOS.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$15.95	APX-20173

BASIC/XA
by Thomas Newton

Recommended for ATARI BASIC programmers/Written in machine language

NEW
1st Winter 1982
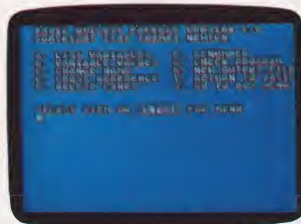
Development tools for ATARI BASIC programmers

Here's a package of development tools ATARI BASIC programmers will find invaluable; they're easy to use and *fast*. Interfacing between your program and the DOS menu, BASIC/XA lets you list all program variables, their values and dimensions, and which lines use them; change variable names; delete a range of lines; renumber the program; and check for bad GOTO statements and syntax errors. Another option lets you print, or store on diskette or cassette the variable list, variable values, and the cross-reference table.

To use BASIC/XA with a program, you first boot BASIC/XA into memory. Both the development tools and all the normal DOS options are then available. Next you load in the program you want to work on. To use a tool, you type DOS, which causes the BASIC/XA menu to display. From this menu, you can select a tool, return to ATARI BASIC, or go on to the ATARI DOS menu.

BASIC/XA uses about 4000 bytes of memory. A BASIC program included with both versions lets you relocate the diskette version for your system and provides cassette owners with a way to transfer BASIC/XA to diskette.

The author invites written comments and questions.

REVIEW COMMENTS
This package combines the functions of ULTIMATE RENUMBER UTILITY, VARIABLE CHANGER, and BASIC CROSS-REFERENCE UTILITY, and more, in a very easy-to-use format.

The comprehensive, well-organized manual is EXCELLENT. Among other things, it contains a detailed description of each subroutine in BASIC/XA, its interface with the rest of the package, and its purpose.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$29.95	APX-10177
Diskette (810)	24K	$29.95	APX-20177

System Software

BASIC PROGRAM COMPRESSOR (MASHER)
by Dale Yocum and modified by Jerry White

Recommended for BASIC programmers/Written in BASIC

Compress ATARI BASIC programs to free up memory

If you've ever worked for hours on a program just to have it run out of memory, this utility is for you. MASHER compresses your BASIC programs into as little memory as possible. You can tell MASHER the name of your program and how many variables you've used (the BASIC Cross-Reference Utility or the Variable Changer, described elsewhere in this section, tells you this if you don't feel like counting). Then MASHER (1) removes REMark statements, (2) converts frequently used constants to variables, and (3) packs together multiple short lines to form longer ones. Depending on how compressed your initial code is, MASHER can reduce the required RAM by as much as 50 percent. Used wisely, it can save you a lot of work and RAM.

MASHER reserves lines 0–9 and variable names Q0–Q999 for its own use.

REVIEW COMMENTS
MASHER not only makes your programs smaller, but also makes them run faster.

Be prepared to wait a *long* time for MASHER to convert a program. Conversions can take anywhere from a few minutes to many hours, depending on the length of your program.

MASHER can make mistakes. You might find that some compressed programs will require "touching up."

A MASHed program will be very hard to read, because all REMarks have been removed and lines have been compressed. Therefore, you'll probably want to MASH a program only after you've debugged it.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$15.95	APX-20008

BLIS, REV. 1.1
by Image Marketing Corporation

Recommended for BASIC programmers/Written in BASIC

Print ATARI BASIC program listings in an easy-to-read format

BLIS prints your ATARI BASIC programs in a clear, easy-to-follow format. You can print each routine on a different page, if you wish. In addition, it indents logical units like FOR/NEXT loops and IF/THEN statements. It can also print your REMark statements in boldface, or it can print them as titles at the top of the page. If your program contains multiple statements per line, BLIS will print each statement separately, indenting as appropriate. All these features make debugging easier, since you can clearly see program blocks and subordination. These features also result in a format that is suitable for publication. Other niceties are running top titles, page numbers, use of the condensed character set to preserve the visual logic even with long statements, and conversion of nonprinting characters within strings to printed representations. To use BLIS, you simply answer a series of prompted questions that set your options. These include starting and ending page numbers (in case you want to print only part of your program listing), whether you're using continuous paper or separate sheets, the name of your program file, and whether you want to print a running top title.

Revision 1.1 corrects an indention error in nested loops.

The author invites written questions and comments.

REVIEW COMMENTS
The formatted program listings produced with BLIS are very pleasing and helpful.

The error trapping could be better.
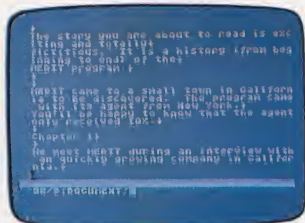
The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge
ATARI 825 80-Column Printer only

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$22.95	APX-20049

ATARI PROGRAM-TEXT EDITOR*

Recommended for teenagers–adults/Written in machine language

An editor for programs and text files

We're proud to offer this exceptionally well-designed, easy-to-use text editor. It's superb for revising source programs written in various programming languages (for example, ATARI BASIC, ATARI Pascal, or assembly language). An outstanding feature of the Program-Text Editor is its two mode approach of immediate text editing along with commands for searching the file and for manipulating both text strings and blocks of text. The editor uses a cursor for working with program text. You edit your text by moving a cursor around the 20 lines of text in the text window and then typing in your revisions. The cursor indicates your current position and where the next character will appear. (The cursor also lets you do automatic vertical scrolling forward and backward in your text.) You can position the cursor and revise text in any of the following ways:

- Move cursor left or right
- Move cursor up or down one physical line
- Move cursor to beginning or end of logical line
- Display previous or next screen of characters
- Insert new line(s)
- Tab to next tab stop
- Insert characters into text
- Delete characters to the left or right of the cursor
- Delete current logical line

It also has an auto-indent feature for repositioning the cursor to an automatic tab stop on the next logical line, which is useful when writing code in languages like Pascal.

The Program-Text Editor uses commands for more general text changes and for moving whole or partial files in and out of computer memory. The command window at the bottom of the display screen contains three lines in which you can retain a series of commands and use them repeatedly, as needed. Command mode offers these actions, among others ("n" refers to a number; "buffer" refers to the part of the file currently in computer memory; "file" refers to the entire file):

- Move cursor left or right n characters
- Move cursor up or down n logical lines
- Move cursor to start or end of logical line
- Move cursor to column n (range 1-200)
- Move cursor to beginning of buffer or file
- Move cursor to end of buffer or file

The editor supports files too large to fit into computer memory with commands to load in sections of the file. You also use command mode to search for specific strings. The editor accepts wild cards as substitutes for characters in search strings. It offers these search commands:

- Search for occurrence n of string 1 in buffer or file
- Search for string 1 in buffer or file and replace with string 2 n times
- Search for string 1 in buffer or file and replace upon verification with string 2 n times

Other commands let you insert and delete text strings. You can delete blocks of characters within a line, or you can delete the entire logical line. You can recover a deleted line with another command.

The editor also supports work with blocks of text. After you place markers immediately before and after the relevant text, you can use these commands:

- Copy the marked block to a new location
- Move the marked block to a new location (erasing its previous position)
- Delete the marked block
- Print the marked block to the printer
- Write the marked block to a specified diskette file

You can also load in a designated diskette file and insert it before the cursor.

Another outstanding feature of the Program-Text Editor is the ability to customize it to fit categories of files. When you specify a filename with a certain extender, the editor automatically uses the options you set instead of its normal settings. Settable options are:

- Set tabs and tab type (normal or expanding)
- Set tab display method
- Set carriage return display method
- Disengage auto-indention feature
- Set maximum line length
- Set left and right screen margins
- Set screen color and luminance and character luminance

REVIEW COMMENTS

This is the best program-text editor we've seen. Its human engineering is excellent. The macro capability of the command window combined with the cursor orientation of the text editing gives you the best of both worlds.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge (for customizer feature only)

OPTIONAL
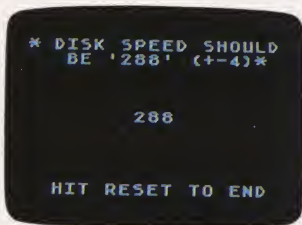ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$39.95	APX-20075

*ATARI PROGRAM-TEXT EDITOR is a trademark of Atari, Inc.

SPEED-O-DISK
by Jubal Ragsdale and Dave Henry

Recommended for ATARI 810 Disk Drive owners/Written in BASIC

Test the speed of ATARI 810 Disk Drives

We don't like to talk about it, but occasionally an ATARI 810 Disk Drive will drift from its normal speed. If you store information on diskettes in a drive that's running more slowly or faster than the normal speed (within a range), you'll end up with diskettes that disk drives operating at normal speed can't handle. One indication that your drive's speed might be off is that you get frequent Error 144 (Device Done Error — invalid "done" byte) or Error 138 (Device Timeout) messages. SPEED-O-DISK is a utility to measure the speed of your drive. The program displays disk speed on your TV screen and it updates the information every five seconds.

Although the instructions describe how to adjust your disk drive if it's not running at proper speed, *you can void your warranty* by attempting to adjust the drive yourself rather than taking it to an authorized ATARI Service Center for adjustment. Neither ATARI nor APX assumes responsibility for the accuracy of these instructions or for the consequences to your disk drive if you attempt to adjust the speed based on the instructions. We recommend, instead, that you take your drive to your nearest authorized ATARI Service Center for adjustment.

The authors invite questions and comments by mail and telephone.

REVIEW COMMENTS
As with any diskette speed program, an incorrect speed occasionally appears when a disk retry occurs briefly.

The user manual is GOOD.

REQUIRES
No required accessories

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	16K	$22.95	APX-20109

EXTENDED WSFN
by Harry Stewart

Recommended for programmers/Written in machine language

An educational graphics language for beginning programmers

Do you know someone who's curious about your ATARI 400/800 Computer but has no programming knowledge to call on to try out your system? This program might be the answer. WSFN (Which Stands For Nothing) is an educational graphics language developed for teaching programming concepts to beginners. Picture a small robot turtle holding a pen in his mouth and sitting in the middle of your TV screen. Now imagine you can command the turtle to do such things as move, turn, and raise and lower his pen. That's what WSFN is all about. WSFN programs consist of strings of one-letter commands like "F" for "forward" and "L" for "left turn." With simple instructions, users can write such standard programming structures as loops and subroutines. This version of WSFN is greatly extended compared to the original language, and it contains many advanced debugging, graphics, joystick, and mass storage features. Although you can do some fairly advanced graphics with WSFN, it's meant to be a beginner's language. Also, because it's strictly a graphical system, it isn't suitable for developing applications programs.

REVIEW COMMENTS
This is a very comprehensive version of WSFN, with many advanced features. It can be a lot of fun to use and the graphics it generates can be dazzling. Also, this language is *fast*, executing faster than BASIC in most cases.

Because of time and staffing restrictions, this program hasn't undergone the extensive testing that any new language should. Some users may find WSFN's command language a bit cryptic at first.

The user manual is VERY GOOD and it's complete, but it still contains some editing corrections.

REQUIRES
No required accessories

OPTIONAL
ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10026
Diskette (810)	24K	$22.95	APX-20026

UTILITY DISKETTE II
by RLM Microsystems

Recommended for teenagers and up/Written in BASIC and machine language

Five ATARI BASIC file maintenance routines

UTILITY DISKETTE II contains five programs for performing various housekeeping and programming functions. The MENU program displays the disk directory and lets you run a BASIC program by typing a number. The LISTER program prints a formatted listing of any BASIC program with substitutions for all non-printing characters. You can print headings and the conversion table showing the printed character substituted for each non-printing character. And, you can select the printed line width, number of lines per page, and normal or compressed type. The COMPARE program analyzes two versions of a BASIC program and displays or prints lines that don't match. HEXDUMP produces a formatted screen display or a printed listing of either memory locations or diskette files. The program works with any type file, including BASIC, binary, and data files. The output is in ASCII representations of printable hexadecimal values. SORT is a high-speed sort/merge routine that sorts fixed-length records up to 255 bytes long in ascending or descending order and on any sort key. The program's sublist algorithm lets you sort diskette files larger than the available memory can handle.

The authors invite questions and comments by telephone and mail.

REVIEW COMMENTS
This is a useful set of utilities. SORT and COMPARE are particularly handy to have, the latter program providing helpful, pertinent information.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$29.95	APX-20124

DISKETTE LIBRARIAN
by Ronald & Lynn Marcuse

Recommended for teenagers-adults/Written in BASIC and machine language

Catalog, update, search, sort, and print diskette file data

"Why doesn't someone write an on-line cataloging system to organize my diskette files," you grumble as you search your stack for the game your friends are impatiently waiting to play. Help is here! DISKETTE LIBRARIAN not only catalogs several pieces of information about your diskette files, but also updates entries, searches and sorts on any unit of information, and displays or prints the formatted catalog. In addition, DISKETTE LIBRARIAN can automatically run a BASIC program stored in SAVE format after it locates the program and prompts you to insert the referenced diskette. This feature can make your computer easier for beginners to use.

A series of menus guide you through these activities. You set up your catalog by first entering a volume number for each diskette (you must leave one sector free on each diskette to store this internal label). Then, as each file name on a diskette displays, you add the following information in response to prompts: (1) description, (2) file type, (3) program source, and (4) date. DISKETTE LIBRARIAN supports both automatic and manual file updating. You can display or print complete or partial catalogs and complete or partial entries that are sorted or unsorted.

The authors invite questions and comments by telephone.

REVIEW COMMENTS
The assembly sort routine makes for very fast file sorts.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or Epson MX-80 Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$22.95	APX-20056

KEYPAD CONTROLLER, REV. 2
by Thomas D. Newton

Recommended for programmers/Written in BASIC and machine language

Convert ATARI Keyboard Controllers to numeric keypads and a program editor

The keyboard layout on the ATARI Home Computer is ideal for many uses. However, for activities involving entering lots of numbers, a numeric keypad would probably serve you better. Now you can have the best of both worlds — the keyboard's typewriter layout and separate keypad layout using a pair of Keyboard Controllers. With KEYPAD CONTROLLER, not only can you enter numbers in keypad fashion, but you can also do program editing. You use one controller to enter numbers, periods, and commas, and the other controller to enter arithmetic operators (+, −, *, /, and ∧) and to move the cursor around the screen. You can move the cursor up, down, left, and right, and you can insert and delete characters.

KEYPAD CONTROLLER has another function programmers will appreciate. You can use it to slow down program displays on your TV screen.

This automatically loaded program is usable with both the ATARI BASIC Language Cartridge and the Assembler Editor Cartridge. Once you load KEYPAD CONTROLLER into computer memory, it remains there until you turn off your computer, but you activate and deactivate the controllers as needed by pressing three keys. Revision 2 contains an option for using the program with two-player games.

The author invites written questions and comments.

REVIEW COMMENTS
If you want to modify the interpretation of the keys on the controller, you can do so with a BASIC program provided by the author.

The user manual is VERY GOOD.

REQUIRES
ATARI BASIC Language Cartridge or Assembler Editor
  Cartridge
A pair of ATARI Keyboard Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	8K	$15.95	APX-10106
Diskette (810)	24K	$15.95	APX-20106

COSMATIC ATARI DEVELOPMENT PACKAGE
by John R. Powers, III

Recommended for teenagers and up/Written in BASIC

A development system for 1802 assembly language

With the COSMATIC ATARI DEVELOPMENT PACKAGE you can use your ATARI Computer as a low-cost 1802 Development System. The 1802 is a microprocessor used in many popular hobby computers and games. The package functions as a development system for 1802 assembly language. Both 1802 cross assembly and data transfer are supported. With your own text editor (for example, the ATARI Assembler Editor Cartridge (CXL4003) or the ATARI Program-Text Editor, APX-20075), you prepare an 1802 assembly language source program using all the power of symbolic references, mnemonics, and operand expression processing, and store it on a diskette file. The cross assembler takes your 1802 assembly language program and produces hex machine instructions and data. Then, using the data transfer program, you can upload and download files, and inspect and change the 1802 microcomputer memory contents.

Features include: a superset of both the RCA CRA Assembler and the Hughes HMDS Assembler; a full operand expression evaluation with nesting to ten levels; a source file chaining option; a sorted label table output; an ability to assemble 20–30 source statements per minute; a two-step methodology permitting the use of the intermediate file as backup; an output fully compatible with UT4 and UT20 hex loading utilities; the source code file created with or without line numbers for input to the assembler; sample 1802 source files included to demonstrate and test features; and file upload and download capabilities with the 1802 source and object code supporting this feature.

The author invites written comments.

REVIEW COMMENTS
Users should have an 1802 microcomputer and be able to assemble an RS-232 interface circuit (instructions provided in the documentation). Those writing cross-assemblers will find the source code instructive. The user manual is EXCELLENT.

REQUIRES
ATARI BASIC Language Cartridge
ATARI 850 Interface Module (for data transfer)
A text editor

OPTIONAL
An ATARI printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	32K	$29.95	APX-20051

The following programs are also available for purchase.

ANTHILL — beat your opponent to the top of the maze. Requires an ATARI BASIC Language Cartridge and two ATARI Joystick Controllers.

Media	RAM	Price	Order No.
Cassette (410)	8K	$15.95	APX-10024
Diskette (810)	16K	$15.95	APX-20024

BUMPER POOL — a two-player version of the popular pool hall game. Requires an ATARI BASIC Language Cartridge and two ATARI Joystick Controllers.

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10053
Diskette (810)	24K	$15.95	APX-20053

CODECRACKER — break the three- to five-digit code within twelve guesses. Requires an ATARI BASIC Language Cartridge.

Media	RAM	Price	Order No.
Cassette (410)	8K	$15.95	APX-10052
Diskette (810)	16K	$15.95	APX-20052

DECISION MAKER — helps you make decisions involving as many as ten choices and ten factors. Requires an ATARI BASIC Language Cartridge.

Media	RAM	Price	Order No.
Cassette (410)	8K	$15.95	APX-10044
Diskette (810)	16K	$15.95	APX-20044

GTIA DEMONSTRATION DISKETTE — a set of BASIC programs showing off the graphics power of the GTIA chip. Requires an ATARI BASIC Language Cartridge and an ATARI 400/800 Home Computer with GTIA chip installed.

Media	RAM	Price	Order No.
Cassette (410)	N/A		
Diskette (810)	24K	$15.95	APX-20104

LOOKAHEAD — try to outwit your opponent in this strategy game played on a number grid. Requires an ATARI BASIC Language Cartridge and two ATARI Joystick Controllers.

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10032
Diskette (810)	24K	$15.95	APX-20032

MINOTAUR — try to find your way out of the random maze before the Minotaur devours you. Requires an ATARI BASIC Language Cartridge and an ATARI Joystick Controller.

Media	RAM	Price	Order No.
Cassette (410)	24K	$15.95	APX-10039
Diskette (810)	32K	$15.95	APX-20039

PRO BOWLING — computerized bowling for one to four players. Requires an ATARI BASIC Language Cartridge and one ATARI Joystick Controller per player.

Media	RAM	Price	Order No.
Cassette (410)	16K	$15.95	APX-10061
Diskette (810)	24K	$15.95	APX-20061

SOUND EDITOR — a program for creating short (one-second) sounds like croaks and rattles. Requires an ATARI BASIC Language Cartridge and an ATARI Joystick Controller.

Media	RAM	Price	Order No.
Cassette (410)	16K	$22.95	APX-10018
Diskette (810)	24K	$22.95	APX-20018

SPACE TREK — destroy the enemy Oralop spaceships that are threatening the galaxy. Requires an ATARI BASIC Language Cartridge.

Media	RAM	Price	Order No.
Cassette (410)	24K	$15.95	APX-10015
Diskette (810)	32K	$15.95	APX-20015

TACT TREK — a tactical-level interstellar combat game calling for lots of patience. Requires an ATARI BASIC Language Cartridge.

Media	RAM	Price	Order No.
Cassette (410)	24K	$15.95	APX-10031
Diskette (810)	32K	$15.95	APX-20031

Be sure to read about the bonus prize in the APX contest for Olympics-related programs. Details are on the other half of this card.

Publications

DE RE ATARI
by Amy Chen, Jim Cox, Chris Crawford, Jim Dunion, Bob Fraser, Kathleen Pitta, and Lane Winner

Handbook for advanced programmers

$19.95 (APX-90008)

DE RE ATARI tells you everything you want to know about the ATARI 400 and ATARI 800 Home Computers, but were afraid to ask. It's an excellent resource and training text for professional programmers who use ATARI Home Computers and for advanced hobbyists who understand ATARI BASIC and assembly language. Neither an introductory manual nor a reference for the computer, *DE RE ATARI* is a tutorial that explains the concepts and principles behind the internal structure of the ATARI Home Computer.

Topics include graphics indirection (i.e., color registers and character sets), player-missile graphics, display list interrupts, scrolling, sound, the Operating System, the Disk Operating System, and ATARI BASIC. Many discussions concern the three special-purpose integrated circuits designed by ATARI — ANTIC (a microprocessor for television display), CTIA (a chip for television display), and POKEY (a chip for input/output and sound generation). Appendices contain information on memory usage, human engineering, the hardware and software used to operate the ATARI 410 Program Recorder, cassette applications, television artifacting, and the GTIA chip (the new television display chip). Sample programs, display screens, and diagrams generously illustrate the discussions on the strengths and versatility of ATARI Computers. A glossary defines and explains some less commonly encountered terms used in *DE RE ATARI*.

An added feature is a laminated Programmer's Card containing the most critical and often needed facts and figures about the computer.

By the way, in case you were wondering, *DE RE ATARI* is Latin for "All About ATARI."

APX PRODUCT CATALOG

$2.00 (APX-90009)

If you're reluctant to share your APX Product Catalog with fellow ATARI Home Computer owners, tell them they can order their own. The catalog, which is published quarterly, contains descriptions of all programs, publications, and hardware currently available through the ATARI Program Exchange. The next time you're in a quandary over what to give someone, if that person is fortunate enough to own an ATARI Computer, try gift wrapping a catalog and let the recipient select a program!

DE-9S WITH DE 110963-1 SHELL (controller plug)

$6.25 (APX-90001)

This connector is suitable for the front Joystick ports of the ATARI 400/800 Computers. Because you can program these ports for both input or output, they're perfect for many specialized interfacing applications. These 9-pin, female connectors have solder-on, gold-plated contacts in a Nylon insulator. To allow the connector to mate more securely with the computer's port, you may need to file the plastic shell slightly.

5-PIN DIN CONNECTOR

$2.49 (APX-90002)

You can use this connector with the ATARI 800 Computer's video plug to connect your computer to video monitors, or to run the sound through a stereo system.

13-PIN I/O PLUG

$9.95 (APX-90003)

You can use this connector, customdesigned for ATARI Home Computers, to build your own interface cables or devices.

13-PIN I/O SOCKET

$4.95 (APX-90004)

This 13-pin, board-mounted connector with right-angle pins is the connector used inside ATARI Computers and peripherals. You can use it to build your own peripherals, extension cables, and interfaces.

DA-15P WITH DA110963-2 SHELL (850 printer plug)

$5.95 (APX-90005)

Use this 15-pin, male connector to connect your ATARI 850 Interface Module to a compatible parallel printer. These connectors have solder-on, gold-plated pins in a Nylon insulator.

DE-9P WITH DE110963-1 SHELL (850 serial plug)

$5.49 (APX-90006)

Use this 9-pin, male connector to connect your ATARI 850 Interface Module to external RS-232 or current-loop devices. These connectors have solder-on, gold-plated pins in a Nylon insulator.

Order Form

Please read all the ordering information before filling out this form.

ΩPX ATARI® PROGRAM EXCHANGE

Name _____

Address _____

City _____

State/Country _____ Zip/Mail Code _____

Phone ( ) _____

_____
(alternate shipment method if UPS does not deliver in your area)

Please indicate the amount
of RAM you have

_____ K

Qty	Order Number					Description	Price Each	Total Each
	APX							
	APX							
	APX							
	APX							
	APX							
	APX							
	APX							
	APX							
	APX							

Subtotal of all items ordered	
California residents add 6.5% sales tax	
Shipping & handling charge	$2.50
TOTAL	

**ATARI PROGRAM EXCHANGE
P.O. BOX 3705
SANTA CLARA, CA 95055**

**Send all orders
to this address**

**Toll-Free Numbers for
Credit Card Orders**

Within California 800/672-1850
Elsewhere in Continental U.S.A.
800/538-1862

Or call direct at 408/727-5603

Payment—
□ Check/Money Order
□ VISA
□ MasterCard

**Minimum order
$10.00, plus
shipping and
handling**

Interbank No: _____
Credit card account no.

_____

Credit card expiration date _____
Signature (as appears on card)

_____

Program Submission Packet Request Form

Fill out this request form to obtain complete information on submitting programs to APX, including a Program Submission Form, Program Submission Agreement, Author's Guide, and contest details.

Name _____

Address _____

City _____

State/Country _____

Zip/Mail Code _____

Phone ( ) _____

Computer background:

_____None

_____Computer user/hobbyist

    _____Have not used ATARI Computers

    _____ATARI Computer user

_____Professional microcomputer software developer (have ads in trade journals and/or existing products)

    _____Have not used ATARI Computers

    _____ATARI Computer user

_____Other (please specify):

Area(s) of interest for writing software for ATARI Computers:
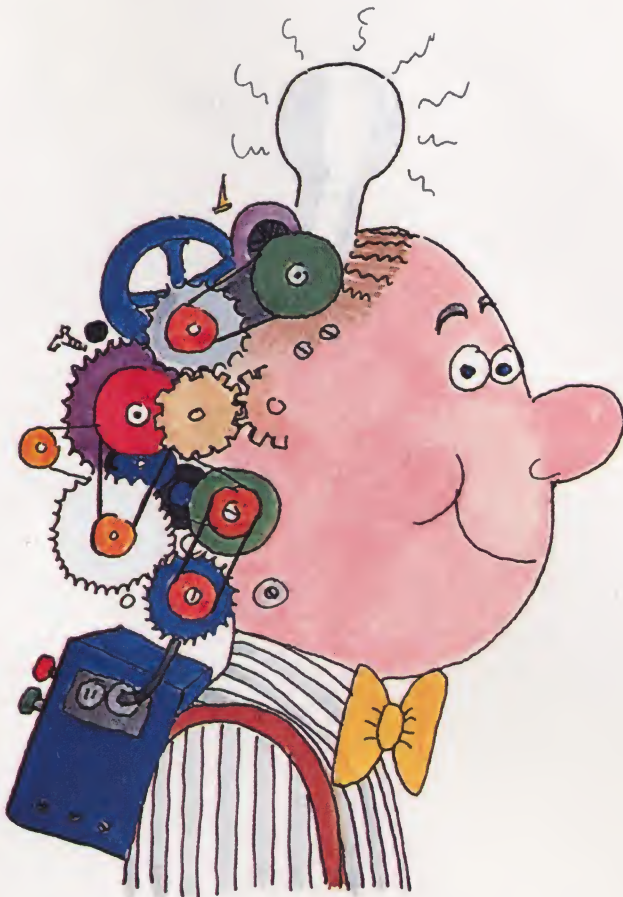
Ordering Information

APX products only. The ATARI Program Exchange handles orders only for the items described in this catalog. For all standard ATARI Home Computer products, including any software, hardware, or documentation mentioned in this catalog, see your local ATARI Computer retailer.

$10 minimum order, plus shipping and handling charge. We'll fill orders of $10.00 or more. Please add $2.50 to your order to cover shipping and handling.

Mail orders. To order by mail, fill out an order form and mail it, together with your payment, to the ATARI Program Exchange, P. O. 3705, Santa Clara, CA 95055.

Phone orders. For faster service, phone in credit card orders, using our toll-free number, 800/538-1862 (or 800/672-1850 for calls within California). You can also call us at 408/727-5603.

Payment by check, money order, VISA, or MasterCard. Your payment must accompany all mail orders. Enclose a check or money order, or charge your order to your VISA or MasterCard account. Include the $2.50 shipping and handling charge in your payment, and California residents need to add 6.5% sales tax to the merchandise total, exclusive of shipping and handling.

No C.O.D. or purchase orders. We regret that we cannot accept orders paid by C.O.D. or by a purchase order.

Foreign orders. At present, we can handle orders only from the United States. Contact your ATARI supplier for more information.

Delivery to P. O. Box numbers. We normally ship your order by United Parcel Service (UPS). Because UPS doesn't deliver to P. O. Box numbers, please use a street address on your order form.

Alternate shipping method. Please indicate an alternate method of shipment if UPS doesn't deliver to your area.

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